

Kay Everett

Works DX

Amelia Lobsenz



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A M E L I A L O B S E N Z

AUTHOR OF "Kay Everett Calls CQ"

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The Vanguard Press, Inc.

New York

L.C. CARD CATALOGUE NUMBER: 52-11122

Copyright, 1951, by Amelia Lobsenz

Published simultaneously in Canada by
the Copp-Clark Company, Ltd., Toronto

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by H. Wolff, New York, N. Y.

Designed by Marshall Lee

to MOTHER and DAD

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— . . . — . . . — *chapter one*

Kay Everett pulled her father's car to a stop in front of Miller's Drugstore. In the light of the store's flashing neon sign she could be seen bending over a slip of paper in her hand. She was a slim, attractive girl, and her brown hair glistened in the flickering light.

She read aloud: "A Spanish-English dictionary, a leather-bound copy of Shakespeare's *Romeo and Juliet*, a slide rule, a Bunsen burner—we have them all

so far!" She waved the paper excitedly before the eyes of her two companions who were beside her on the front seat of the car.

"Yes, we have everything to date," came the always skeptical voice of Diana Lane. "But the scavenger hunt isn't over yet. Let's guess what our physics teacher is going to suggest for the list."

"Or Mrs. Anderson from home economics. Maybe she'll want a pheasant under glass." This was from Flip Adams, a slight blond girl, the youngest of the three, who was just entering her senior year in the high school. Flip, with her characteristic good humor, always managed to make any situation seem gay and amusing—though winning their high school's annual scavenger hunt was definitely not a frivolous occasion to the three girls. The hunt was the climax of a day-long program marking the end of the school year. To Kay and Diana, as graduating seniors, it meant a happy climax to a successful year and their last chance to win the most coveted prize of the season—rumored to be unusual this year. The first team to report to headquarters with all the things on the list—hard-to-find items selected by the various teachers—would win the prize.

It was Flip who slid out of the car and ran into Miller's to phone hunt headquarters at the high school to find out what the final items on the list were. And

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it was a sobered Flip who came out a few minutes later, her wispy blond hair flying in even more directions than usual.

"Oh, oh," said Kay, "take a look at that hair. Something must be wrong." Diana nodded. It was true: when anything worried Flip, her hair, never quiet, suddenly seemed electrified.

"Did you stop for a soda?" kidded Diana. Miller's was their crowd's favorite hangout for sodas and sundaes and soft drinks.

Flip just shook her head and held out a scrap of paper.

Diana took the paper, opened her mouth, and then kept it open.

"That's right," laughed Flip shakily, "I thought that first item would stop even you. 'A baby turret!' Now, who in the world do we know who has a baby—and who would let us borrow a baby at this time of night?"

"Wait a minute," said Diana. "A baby turret's not a real live baby. It must be some kind of an animal—a baby animal."

Kay, who had been laughing silently behind the wheel of the car, now burst into loud chuckles. Both her friends turned with astonishment. When she could catch her breath Kay explained quietly. "A 'baby turret' is a type of inductance coil used in radio

circuits. That must have been listed by Dr. Watson or someone in the physics department. But the problem's where to get one."

"Zumpie! It's good to be part of a team as smart as you and Diana," said Flip.

"I hope I did as well on my amateur radio license test last month," replied Kay worriedly. "I still haven't gotten my ham ticket and my call letters."

Like all would-be amateur radio operators, Kay Everett had taken a special test given by the Federal Communications Commission. Any American citizen, of any age, can become a ham. Those who pass the test receive, free, a license permitting them to operate on the allotted amateur frequencies and are given a radio "name," or call letters, to use on the air.

For Kay this interest in ham radio had begun the previous summer when she, Flip, and Diana had traveled across much of the United States in a trailer, together with a college junior, Jane Carlton. Jane, long a YL (ham slang for "young lady" ham), had interested Kay in her hobby. And before the trip was over Kay had begun studying Morse code and getting ready for her own ham examination. Kay had learned a great deal just by watching Jane operate the portable receiver and transmitter she had installed in the car. And now Kay was eager to participate as a licensed amateur in her new and exciting hobby.

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She sat silent, thinking, for a minute. Then she started the car once more. "Let's go see Bob Weeks; he's a ham and may have a baby turret we can borrow."

Stafford, North Carolina, is the kind of town where you may not know everyone in town—but at least you usually know who everyone is. Bob was a boy Kay knew only by sight; he had been a senior in high school when she was a freshman, and even then, she remembered, he had been active as a ham.

It was that wonderful period of early summer when a sleepy town like Stafford seemed to rub its eyes and say, "Time to shake off this winter languor. Time for summer fun. The young folks are back from school once more."

Kay knew Bob was home from the university for his summer vacation. Diana and Flip waited in the car while Kay hurried up the cobblestone walk to a pleasant red brick house. Kay's ring was answered by Bob's father, Dr. Elbert Weeks, a tall, graying electronics engineer, whose inventions had helped the United States during the last world war. Kay shook hands gravely, remembering that it was rumored around Stafford that Dr. Weeks was once again engaged in developing a secret device of great importance to America's armed forces.

Bob Weeks followed his father into the living

room. A tall boy, he seemed almost awkward at first glance. But Kay's heart did a strange sort of flip-flop as she glanced at his lean face and watched it break into a lopsided grin.

"A baby turret?" he repeated. "There's probably one lying around my ham shack. Come on out to the back yard."

Kay followed him through the house and out the back door.

"So you're waiting for your ham ticket?" the boy called over his shoulder. "First YL I've met, though I've talked to plenty of them on the air. Guess girls like ham radio so they can gab on the air. It's a private long distance telephone for them."

Kay bit her lip in annoyance. "I'm sure YL's are just as keen on hamming as men are. What about Jean Hudson, who was a code speed champion when she was just eight, or all the girls who've been heroines in floods and storms when ham radio was the only means of communication?"

As she spoke Kay thought of the two Florida girls, only fifteen and sixteen, who had radioed for needed food and medicine for their town during a recent rainstorm and flood.

Bob had turned and was watching Kay with some surprise. "Maybe you are serious about ham radio, at

that," he finally said. "Sorry if I hurt your feelings. Forget it, and look at a real ham shack."

Kay was still annoyed, and she was sure he was only being polite now, but she silently determined to show him later that he was wrong about girl hams in general and herself in particular.

The ham shack—the term is used to describe an actual small "shack" or house for hamming, or just a room set aside for the purpose—was a small white frame house in the Weekses' back yard. Leading from the roof were the telltale wires that indicated this was a ham's sending and receiving headquarters.

Kay stopped in the doorway and caught her breath. She knew hams were collectors of radio equipment, but she had never seen anything like this. The entire room was lined with toolboxes, metal racks of equipment, meters, coils of wire, log books, even broadcast receivers in their conventional cabinets.

Bob followed her eyes. "Here's my rig." He pointed to a large black transmitter made of metal racks set on top of one another and studded with an assortment of dials and meters. "My receiver"—he indicated a black metal box standing on a table—"and my microphone. That's my setup. Those wires lead off to my antennas strung from the roof of the house to a tall tree down the block."

Kay nodded, a little irritated at this basic explana-

tion. "I spot all the usual equipment—even though I'm just a YL. But what's all this other stuff? That's not all necessary, surely."

Bob shook his head. "Some of those test meters are useful for checking and repairing a ham rig. But mostly this is for testing broadcast receivers that are on the blink. I have a radio repair business," he added proudly.

"How wonderful," exclaimed Kay. "Guess that keeps you pretty busy."

"It does," the boy admitted. "Actually I have more than I can handle. Now that Elhot Perkins went into defense work I'm the only radio repairman in town, and something seems to be happening to somebody's set all the time. Just the bookkeeping and paper work alone are more than I can keep up with. But all this chatter isn't getting you that coil!"

He fished in a large box for a few minutes while Kay held her breath, hoping that he'd come up with the turret. The scavenger-hunt time was running out. Every item was taking a long time to find. It was eight o'clock already, and the contest deadline was nine-thirty.

He straightened up, holding an object that seemed to be a mass of wires. Actually it was five separate wire-wound coils, joined to a switch. "Here, mademoiselle, my only spare, so please don't lose it, and re-

turn it as soon as you can. I doubt if there's another one in town at this minute."

Kay promised to return it, and left with her head whirling. She stood outside the door briefly and tried to figure why she felt so odd. She had a strange, excited feeling—trembly but nice.

Just the excitement of meeting another ham, she decided, and raced down the walk to the car. She was greeted with shouts of: "You must have taken your ham test all over again," and, "Well, I hope at least you got the turret."

Kay quickly described meeting Bob. And if Flip and Diana hadn't been so intent on the scavenger-hunt list, they might have noticed that Kay blushed when she mentioned his name.

But Diana was already reading the next item: "A kolach."

"Zumpie!" Flip chortled. "Who ever heard of that? It must be a mistake."

This time Diana could show her erudition, and she pinched her forehead in a characteristic way that signified she was thinking deeply.

"No, it's no mistake. A kolach is a Czechoslovakian flat fruitcake. This is probably Mrs. Anderson's suggestion. You know she loves foreign dishes. The problem is where to get it." Diana was beginning to look really worried. "That's fancy baking and has

to be done just right. I don't know who in Stafford could make them on short notice."

The trio sat glum and worried until suddenly Flip shouted, "Zumpie! I have it! Mrs. Sporny, who comes in to clean our house once a week, is Czechoslovakian, and such a nice lady. I'm sure she'll make us one. Mom says Mrs. Sporny knows all there is about Czechoslovakian cooking."

Soon the green sedan was carrying its three eager passengers through a part of town Kay hardly knew. The streets became narrow and rutty; the houses began to wear a sad and run-down look. Even the trees looked bleak and shaggy.

Flip, who was watching the house numbers, called, "Number 220 coming up."

Kay nosed the car to the curb, narrowly missing a deep hole in the street. If Stafford had a slum area, this would be it, thought Kay.

But Number 220 itself was neat and trim. True, it was tiny and its paint was wearing thin, and here and there a shingle had fallen off over the years. But it had a well-cared-for look that stood out in that neighborhood of neglected homes.

The girls, en masse this time, trooped up a narrow dirt path. Flip knocked at the door. There was a long silence, and then Flip again knocked briskly.

This time the door was opened abruptly and a

voice said, "Yes?" The voice was quiet, and the girls saw peering out at them a long, dark, expressionless face of a middle-aged man.

Flip's words came in a rush. "May we please see Mrs. Sporny? It's very important."

There was the briefest of nods, then the door was pushed almost shut. "Well, that's polite," began Diana, but the door swung aside as she spoke and a cheerful voice called, "Filippa, how are you, dear? Does your mother want me to come early this week?"

A plump, smiling woman was standing just inside the door.

Flip quickly explained why they had come, and before they knew it the girls were being ushered through the bare but spotless house and into a large bright kitchen. The kitchen, as in many European homes, was the most important room in the house, where not only were the meals cooked and eaten but where most of the visiting was done, too, and the sitting and reading of an evening. The kitchen was the real center of the home. There were the characteristic Czechoslovakian huge black iron kettles and skillets hanging from hooks along the walls. Colorful teacups were arranged on shelves above the kitchen sink.

"Was that your husband we met, Mrs. Sporny?" asked Flip.

Mrs. Sporny was already hunting in her cupboard

for the right pan, and she called over her shoulder, "No, I'm a widow. That's my cousin, Stepan. He just arrived in America from Czechoslovakia. He's staying with us until he can earn his own way here. Imagine, I had not seen him since he was a young boy, until he arrived last week. That means a lot when you're in a strange country."

Mrs. Sporny, wearing a large striped apron, bent over a businesslike wooden kitchen table.

Kay watched, fascinated, as Mrs. Sporny began making the kolach. She took some dough out of a large bowl sitting at one corner of the table.

"Luckily, I always have dough around, because my children like fresh pastries every day," Mrs. Sporny explained as she deftly kneaded the dough on a huge breadboard, patting it into a round, flat shape. She greased and then floured a round tin pan and placed the dough in it.

She hurried over to her old-fashioned icebox and took out a jar of cherries. These she dropped one by one onto the top of the dough. She broke an egg, beat it lightly, brushed it over the edges of the cake, and quickly thrust the tin into the oven of her large, purposeful-looking stove.

The girls, who had been bumping into one another in their eagerness not to miss a single motion, now sat

down and leaned back in their chairs. "It bakes now," said a voice from the doorway.

"But of course, my Anna, come in and meet the girls," said Mrs. Sporny. Kay immediately recognized the girl with enormous black eyes and long dark pigtails as a freshman she had seen around the high school halls. She had remembered the girl because of her unusual dark prettiness and a manner that Kay found quaint and "out of this world." That's the phrase, thought Kay, as the other girl primly bowed to them each in turn.

With her own shyness still something of a challenge to her, Kay could feel sympathy for this girl whose life had obviously been so sheltered.

"Can you cook like your mother, Anna?" asked Kay, nibbling eagerly at a delicious piece of strudel Mrs. Sporny had offered her. Flip and Diana were doing their share of eating, too. Anna just smiled and shook her head at the question, and sat down on one of the ancient cane-backed kitchen chairs.

"And my little Karel—now you know the family!" Mrs. Sporny gestured to a lively, curly-haired boy of around seven, who had come in wearing blue flannel pajamas.

"Bedtime for you, Karel," said Mrs. Sporny, but at the same time she indulgently handed him a piece of

pastry. It was obvious that little Karel was a spoiled but sweet child.

The boy had scarcely swallowed his pastry before he bounced over to the girls for more. At a nod from his mother Diana handed him one. "That child and my strudel!" commented Mrs. Sporny fondly.

"Well, your strudel!" said Flip. "Zumpie, who wouldn't want more of it?" At the same time she swerved in her chair, neatly dodging Karel's attempted flying tackle.

"Stepan," answered Anna quietly.

"Stepan doesn't like anything," piped Karel, now chasing Flip around the table as if he had known her all his life. Flip, always ready for a game, happily dodged around among the chairs.

"Now, children," said Mrs. Sporny. "Stepan is still getting used to things in this country, that's all. It takes some people a long time."

Flip nearly collided with Mrs. Sporny as she pulled the kolach steaming from the oven. The sight of the pastry was enough to stop Flip's and Karel's antics.

Back in the sedan, a few minutes later, with stomachs full of strudel and carrying their precious kolach for the scavenger hunt, the girls checked their watches worriedly. It was almost nine o'clock; they'd spent nearly an hour at the Sporny's.

Diana expressed it. "We're getting the items gradually, but time's getting us!"

The others agreed, though at the moment they felt too full of good food to be worried.

Fortunately, the next things Diana read off the list that Flip had copied at her last phone call, were, as Flip commented, "Just cinches."

"Yes, but probably just cinches for everybody else in this contest, too," added Diana grimly. After twenty minutes and three more stops the girls had added an electric guitar, a King James edition of the Bible, and a baby's rattle. Their list completed, the trio rode back to the school recreation hall. Like all the contestants, they had phoned hunt headquarters three times before they finally were given the complete list of items. This rule was a deliberate and successful attempt of the teachers to increase the suspense of the game.

Each girl loaded her arms, and they ran up the cement walk. "I only hope we're not too late," said Kay. They could see that the hall was already crowded with the other contestants.

"Hurry up, girls. Another five minutes and you'd have been disqualified," called Mrs. Anderson. "Oh, I see you have a kolach," she added, and hurried over to break off a small sample.

The judges went from team to team, checking

items from the list as they went. Kay's heart sank. Since they were so late and couldn't hope to compete on a time basis, their only hope was that the other teams would be lacking one or more items. Then, despite their being the last team to come in, they might win on points alone.

And that's exactly what happened! Mrs. Anderson made the announcement: "The only team with everything on the list is Kay Everett's. All three girls win trips to the State Fair at Thompsonville next week, with all expenses paid."

Kay could hardly sleep that night. She tried to count sheep, but each sheep took on a characteristic. One was a ham transmitter, and this one Kay chased and chased. One was Stepan, and something made the girl stir uneasily in her sleep. As she fell into a deep slumber she no longer thought of sheep but of a boy with chestnut hair and a friendly smile.

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— . . . — . . . — *chapter two*

The next week was a busy one for Kay. She thought all week about the Thompsonville fair, and Mrs. Everett was so pleased at Kay's having won the contest that she made her a new dress for the occasion.

Kay spent one whole day just taking back the things they had borrowed for the scavenger hunt. Since she was the only one of the trio who had the use of a family car, it was up to her to handle this chore.

As she walked up the Weekses' walk once again, Kay felt it was no chore but quite the opposite. Bob was on the air when Kay was ushered into the ham shack by his mother.

He waved her to a seat and finished his call: "CQ, calling CQ, calling any radio amateur, this is W₄VLS, come in someone, please." With the last CQ (which Kay always said meant "seek you")—a general call to any listening ham to respond and chat—Bob laid down his microphone, flicked a switch to change his antenna from the sending position to receiving, and began tuning his receiver dial over the amateur frequencies.

They both listened as Bob turned the knob slowly. They caught snatches of conversation from other hams in Texas, in New Orleans, and one whom Bob identified as a shut-in who had been sick for years and to whom ham radio had been a means of daily vicarious traveling.

Then a twangy Westerner, a "W₇" from Montana, returned Bob's call. He told Bob about a freak early summer snowstorm he had just experienced.

"I almost lost my whole herd of sheep," he said. "The storm came on so suddenly that nobody was prepared, and the sheep were out to pasture high up in the hills, alone except for my collie dog. I was sure the dog would try to lead them down the hill to get

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out of the storm, but I knew from the thickness of the snow that they could never reach home.

"So I radioed a ham I knew on the next ranch, just below the hill, and asked him to be on the lookout for them. Ten minutes later he called me back on the air. He'd found the sheep, shivering with cold, just outside his gate. He led them into his barn to stay until the storm was over. We were snowbound for nearly a week, and I don't like to think of what would have happened to my herd if I hadn't spoken to that ham."

Finally Bob switched off the set. "I wish I had more time for this sort of rag-chewing," he said. "But business is too darn good."

Kay had an idea, and she impulsively voiced it. "Bob, why couldn't I help you here?" She indicated the sets waiting to be repaired and the books and records covered with dust in one corner of the large desk.

"I'll keep books and send out bills and wait on customers—and I can help repair sets, too."

Bob laughed at her rush of words. "Well," he began dubiously, "you could keep the books, and I do sometimes forget to send out bills when I'm hamming. But no repairing. You couldn't do that."

Kay snorted.

She picked up the handle of an electrical instrument that looked much like an old-fashioned curling

iron. "I already know how to handle a soldering iron. Got anything you want soldered?" she asked briskly.

He silently handed her a small metal resistor a tubular object with wires sticking out of each end—and indicated the spot on an upturned radio receiver where the resistor was to go.

Kay plugged the iron into the nearest electrical outlet and in a minute leaned forward and deftly soldered the resistor in place. She gave it a minute to cool, then tested the connection with her fingers to make sure it was firmly joined.

Bob checked for himself, then nodded. "Okay, you're hired. But at first only bookkeeping and soldering. Then later, if you learn . . ."

"I'll learn, Bob," Kay said seriously. "I want to know everything about ham radio. If I can learn to repair these sets maybe I can build my own ham set, too."

For a moment the boy's eyes softened. "Do you really want to build your own rig, Kay? If you do . . ."

Then he stopped short and shook his head. "No, you'll be like all the rest of the girls. You'll be off to the movies after a week."

Kay said earnestly, "You'll see. When do I start?"

"How about Monday? And I'll pay you a commission on each set you work on."

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When Kay walked into the Everett dining room that night she saw a small, official-looking envelope peeking from under her plate. She tore it open with trembling fingers. It might be a notice saying she'd failed and would have to take her ham test over again, but the paper she pulled out said as clear as could be: "Kay Everett, W4WOW." Just a jumble of letters to the average person, but to Kay—her own call letters, a magic carpet, a passport to excitement, to armchair traveling and even romance.

It meant that Kay was now a government-licensed ham. She had passed the FCC test that includes the sending and receiving of International Morse Code at thirteen words per minute, some facts about the technical side of ham radio and the laws that govern the hobby. This is the "general" amateur test.

Had Kay not been ready to take her general test, there is also a "novice" license, requiring only five words per minute of the code, beginners' rules and only the most elementary radio theory. As many other beginners have done, she could have gone on the air with a novice license and then taken the test for her general license after a year, when the novice permit expired. All amateurs must learn the dots and dashes of the code, even though many, like Kay, find they prefer the more casual radiotelephone, or voice, operating.

Kay was now one of those privileged persons who could roam at will on the short-wave amateur radio bands and chat with other hams living in every corner of the globe. As a YL, Kay could also enter into those special clubs for girl hams—such as the Young Ladies Radio League—where girl hams meet on the air waves in their own private network and have their own scheduled contests, even their own newspaper, *Harmonics*.

Kay ran into the kitchen, standing straighter and feeling years more mature now that she had her license.

Her mother was placing glasses of tomato juice on a tray, and her father was lounging in the kitchen doorway, chatting. They stopped short at the excited face of their daughter. "It's here," called Kay. "My ticket, my very own ham license. I'm W₄WOW from now on!"

Mrs. Everett put down the tray and ran over to kiss her daughter. "I'm so pleased and proud, dear. You worked hard for your license, and you deserve to be a ham."

Kay remembered how patient her mother had been about questioning her over and over from the ham radio manuals when she was studying for the test, and hearing her practice the Morse code repeatedly. Her eyes were misty, and she gave her mother a bear hug.

Mr. Everett put out his hand. "Congratulations, Kay. Anything worth doing is worth doing well. I'm sure you'll make a fine ham, the way you do everything else."

"How did they pick 'W₄WOW' to give you?" asked Mrs. Everett.

"Because I'm such a wow," laughed Kay. "But seriously, it's just luck what call letters you get," she explained. "They're given out alphabetically. The only system is that every country has its own prefix to identify its hams from those of other countries. Call letters in the United States all start with 'W.' 'C' is for China, 'G' for Great Britain, and so on. Then, to make it even easier to tell just where a ham is from, the United States is divided into ten call-letter districts. A North Carolina ham like me gets a 'W₄' call because he's in the fourth district, which is the South. One from New England gets a call beginning with 'W₁.'

"But I'm just W₄WOW!" Kay sang out, and began to dance around the room in her excitement. "I can hardly wait to go on the air. Imagine, I'm going to have my own ham station!"

"Just a minute, young lady." Mr. Everett spoke quietly, but Kay knew immediately that this was his "stubborn" voice. "I'm very proud that you passed your test, Kay. Don't misunderstand me. But radio

equipment costs money. And I've had more than my share of expense this month. I just finished my last payment on the car, and only today I sent in your tuition payment for the university next fall. I can't put a lot of money into a hobby that you may tire of next week."

Kay had heard her father voice similar objections before, but somehow she had never realized that he was serious about them.

"A ham station doesn't have to cost much," she answered. "It can cost anywhere from forty dollars to forty thousand dollars. An Australian ham talked to six continents with a tiny ten-watt transmitter. One in Columbus, Ohio, using code, talked with South Africa, New Zealand, and Australia—halfway round the world—with one-half watt of power. On the other hand, a San Francisco ham spent a hundred thousand dollars on his station, and a Mexican ham fifty thousand dollars on his.

"I wouldn't want or need an expensive station to start with," Kay added. "And, Dad, how could I ever tire of ham radio? Remember how all last summer out West I kept studying so that I could be a ham."

Mr. Everett interrupted his daughter. "That's another thing. It seems to me that ham radio got you into plenty of trouble last summer—chasing jewel thieves and getting mixed up in a forest fire. I want

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you to live a normal life like the other girls your age and not fiddle around with dials and meters day and night.

"If you're intent enough on this ham radio idea, you'll find a way to buy your own set out of your allowance, or a summer job. Or maybe," he added jokingly, "you can build one."

— . . . — . . . — *chapter three*

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Kay went upstairs to her bedroom right after supper that night; she had a lot to think about. It was a cheerful corner room with a blue-and-white-striped chintz drapery-and-bedspread set that Kay and her mother had made a few summers before. The blue-and-white color scheme was carried out in the rest of the room. The rag throw rugs had blue flowers woven into them, and Kay's soft chintz rocker wore a white slip cover with blue trim.

Kay sank into the rocker now. In her hand she had *The Radio Amateur's Handbook*, a book published by the American Radio Relay League.

The League, known as the "ARRL," is the largest organization of hams in the world. It represents amateur radio in treaties and legislative matters and is generally accepted as the spokesman for America's more than eighty thousand hams, many of whom are ARRL members. From headquarters in West Hartford, Connecticut, it publishes *QST*, a magazine of interest to hams, and sponsors contests and amateur operating activities.

The handbook, a general guidebook for amateurs both new and experienced, tells how to build a station and then how to operate it according to established practice. Kay had already thumbed through the book several times. Now she referred to it for aid in making a circuit diagram of a transmitter.

She was determined to build her own transmitter. She felt it would be good experience, and it was the cheapest way of getting on the air. Kay's pencil painstakingly sketched circles and lines that indicated the tubes and resistors and condensers that make up a transmitter. Soon she had worked out a simple circuit for a low-powered model.

It was now getting late, but she couldn't resist turning back once more to the section on "Radio Op-

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erating." She read again about the exciting awards offered by the ARRL for special activities: the "Worked All States" (WAS) award for a ham who talks to another ham in every state; the "Century Club" certificate for contacting one hundred countries; a "Worked All Continents" (WAC) award for working every continent in the world; the code-proficiency certificates for receiving the International Morse Code at speeds varying from fifteen to thirty-five words per minute.

Kay was thrilled by the idea of winning any recognition, but the "DX" or long-distance awards excited her the most. She found herself determined to become one of those hams known as "DX hounds," whose greatest joy is to contact unknown and far-away places. The WAC and DX Century Club awards were on her mind as she fell asleep that night. But she knew she must first manage to get on the air.

Kay was up early the next morning. She rummaged among her mother's pots and pans until she found what she was looking for—an old wooden bread-board stuck away in one corner of the cabinet. "May I have this, Mom?"

A puzzled Mrs. Everett gave her consent, and Kay hurried out of the door. Today was her first day on her new job with Bob Weeks.

"Look what I've got," cried Kay as she ran into

Bob's ham shack. In one hand she waved her ham license, while the other held the breadboard and her carefully inked circuit sketch.

"Congratulations!" Like any other ham, Bob was delighted to welcome a newcomer to the hobby and was interested in helping her along. His first words were, "What about equipment?"

Kay sobered. She told Bob about her father's feelings on the subject. Her own allowance was tiny, and she knew it would take a long time to be able to buy parts for even a small rig with the allowance alone.

Bob took one look at her worried face and grinned his cheerful grin. "Now, wait a minute. You know that plenty of hams have gone on the air with equipment that cost almost nothing. It just takes a little ingenuity sometimes."

He took the drawing out of her hand and examined it, then looked at the heavy wooden board Kay still held. "Okay, this is as good a start as any. I like your circuit drawing. It's a good beginning transmitter. It won't be high powered but will be fine for a start. And we'll follow your plan and mount the parts right onto this breadboard."

"Quite a contrast to your job," Kay said a little wistfully.

"I started out with a low-powered breadboard transmitter just like you'll have," Bob said. "It's more

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fun that way. Don't regret that your dad won't just go out and buy your equipment for you. It's better to start with something you build yourself."

"But what about parts—" Kay began.

"You'll be earning money from me, remember? That, with your allowance, should be enough. I'll find a lot of things around here to use, too. I'm building it," the boy added.

"Just a moment!" Kay jumped up. "I'm building this transmitter—and I want the price of every part subtracted from my salary. I'm going to be a real ham—a DX hound, too! I want to talk to every continent in the world, and to every country."

Bob laughed aloud at her impetuosity, but respect was showing in his eyes. "Okay, okay, Kay, but there are other things in ham radio besides DX. It has lots of exciting sides. You'll find that out for yourself, in time.

"Seriously, though, if you're determined to work DX, we should try to get your rig in shape for the big DX contest later this summer. That's when every DX hound in the country will be on the air contacting hams from all over the world. They'll all be trying to work the most stations in the most different places. It's an exciting contest, and to win is a great honor. I almost won one year," he concluded wryly, "but lost

by just a few points. However, with you in it this year, what chance will I have?"

Kay threw a small condenser at him, and started addressing bills.

Before leaving that day, Kay made a start on her transmitter, under Bob's direction. Mrs. Weeks stuck her head into the ham shack to invite Kay to dinner that night. Kay blushed with pleasure. Here was a chance for Bob to see her as a girl, not just a ham. She would do her hair in a new way and wear a pretty blouse and not have to compete with an antenna for Bob's attention. Kay admitted to herself that she would find Bob fascinating even if he weren't a ham. She wanted him to feel the same way about her, but Bob seemed to have thoughts for nothing but radio.

Kay drove home slowly, thinking about the coming evening. The car motor purred contentedly as if in tune with her thoughts. She realized once again how generous her father was in letting her have the car so often; few fathers were so easygoing on that score. Yet when it came to ham radio he could be so very stubborn.

She pulled the car to an abrupt stop and called out. She had spotted Anna Sporny walking down the block, apparently heading for the Everett home.

In Anna's hand was a white box. "A little gift of

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pastry for your mother from mine," she called out.

Kay eyed the box happily. "I'm sure Mom will enjoy it, and I know I will." She added jokingly, "Your mother should go into the baking business instead of doing house cleaning."

The younger girl answered her joke seriously. "I wish she could. She's finding the cleaning more and more tiring. She works so hard many days that when she comes home she is often too tired to sleep."

Kay impulsively leaned out of the car and squeezed the girl's hand in sympathy. She murmured her appreciation of the pastry and hurried home with the box.

She drove up the Everett driveway. Parked all along the street were cars that she recognized as belonging to her mother's weekly bridge-club members. She picked up the box of cookies and went in the back way quietly, hoping not to disturb anyone.

But Mrs. Everett was in the kitchen. She was bending over the oven with a desperate look on her face. "Look at my cake, Kay." She indicated a limp-looking item. "It fell! The only time my cakes ever turn out badly is on bridge day, just when I want to serve something especially nice."

Mrs. Everett looked so distressed that Kay stopped at the kitchen door to try to offer a suggestion. The cake was obviously hopeless, and she could hear the

chatter of voices from the next room. Bridge was over, and the women were politely waiting for the tea and dessert that always followed. Each member always tried to serve something unusual, and Mrs. Everett was proud of her desserts.

Kay shifted from one foot to the other worriedly, and in so doing she hit herself with the box she held in one hand, dangling from its string.

"Of course! I'd forgotten these. Mom, serve the ladies this pastry Mrs. Sporny sent you. Her baking is delicious, and it'll be like nothing your friends have ever tasted."

Mrs. Everett took the box and opened it. She pulled out a piece of apple strudel and bit into it questioningly. Then her face broke into a smile. "Well, if this one is any sample . . ."

When Kay came downstairs later, dressed for dinner at the Weekses', she was greeted by calls from the departing women:

"Kay, where did you ever get that wonderful pastry?"

"Does this Mrs. Sporny make things to sell?"

"Please write her address down for me, Kay. I want to order something for a party I'm giving."

Kay sat down at the desk in the living room and wrote out Mrs. Sporny's name and address on slips of paper. She quietly planned to discuss a new idea with

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Anna and Mrs. Sporny. She felt certain Mrs. Sporny could make a success of cooking, if only she could be persuaded to try.

The moment Kay was seated at the dinner table that night she knew something was wrong. Mrs. Weeks was a cheerful and plump little woman, usually smiling, and she gave Kay the impression of being happy just to bask in her famous husband's shadow, but tonight she looked nervous and worried.

Bob was gulping down his food, eyes fastened on his plate. Kay felt unhappy and neglected. She had been looking forward so to seeing Bob as a friend and not just as a fellow ham, and now he was hardly looking at her. She bent her own head over her plate, scarcely able to swallow the food.

Bob's father, Dr. Elbert Weeks, was pale and drawn. He said almost nothing all evening, and when everyone had finished eating he asked to be excused from the table.

Mrs. Weeks followed him out of the room a few minutes later, and Kay and Bob were left alone.

"Kay," said Bob. "I can see you're hurt, and I don't want you to think you weren't welcome here tonight. It's just that something happened today after you were invited. It's something that has nothing to do with you but which has us all very worried and unhappy."

Kay nodded and tried to smile, but she was still too unhappy to do it successfully.

"Look," Bob said abruptly. "Don't be hurt. I shouldn't say a word, but I'll tell you what happened. But you've got to promise me you'll never mention anything about it to anyone."

Kay nodded firmly.

"Well . . ." The boy took a deep breath and forced himself to go on. "Dad, as you know, has done a lot of work for the United States Government. He designed some of the radio equipment the Signal Corps men used in the last war, and now that Army radio circuits have grown more complicated he has had to design newer and more up-to-date equipment.

"He recently developed plans for a revolutionary new portable device, known simply as 'KL,' which will allow communication over distances never dreamed possible before. He completed the circuit except for a few bugs. It was so important for him to finish it quickly that the government granted him permission to bring it home and work on it here.

"Dad always does his best work here. So last night he brought his papers home from the government laboratory. And, sure enough, in his own workshop he did finish this morning.

"We didn't know, Mother and I, what he was

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working on—still don't know any more than I just told you. Just Dad, his laboratory assistant, and a few others know any of the details. But he came to my shack shortly after you left today, called in Mother, too, and told us about the circuit. He had to tell us because he needed our help. He had left the plans in his safe, unlocked, for not more than ten minutes while he was out of the room.

"When he came back the drawings were gone!"

Kay, who had been listening fascinatedly, gasped at Bob's last words. "You mean they're stolen?"

Bob nodded grimly. "Stolen! Probably by a foreign spy. We all searched the house for hours, but there wasn't a trace of the plans anywhere. Then Dad called the FBI, they're sure a spy or spies took the drawings. The funny part is that the spies knew that Dad had brought the plans home. They knew exactly when to strike."

"Spies! Here in Stafford!" Kay could scarcely believe her ears.

"Oh, it can happen anywhere," said Bob seriously. "Of course, lots of people are accused of being spies who are really innocent, but there are foreign spies working undercover in the United States today. No reason for Stafford to be an exception."

"The loss itself is very serious," Bob added. "But to me Dad's feelings are just as important. He feels per-

sonally responsible for bringing the plans home from the government laboratory. He even thinks suspicion may fall on him—or one of us here—because of the sudden disappearance right after he perfected the circuit.”

“But nobody could blame your dad,” exclaimed Kay.

“I guess the FBI knows from experience that anybody at all can be at fault,” Bob said. “An FBI man questioned us all today, and when I told him we always leave our doors unlocked, he looked at me as if he thought I was crazy.”

Kay nodded. She had always been happy that Stafford was the kind of town where you never bothered to lock your doors. There had been occasional crimes, but they were so infrequent that they stood out in everybody’s memory. People would say, “It happened about the time Abner Hector had two chickens stolen,” or, “Remember when Mrs. Witherpoon found a cake taken from her window sill?”

Seldom was a local resident involved in such things. Stafford people liked one another too well for that.

This was a tragedy, Kay knew. Not only were the drawings valuable to Dr. Weeks, but they were obviously of great importance to the United States.

She sat still in her chair with goose pimples run-

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ning up and down her spine as a thought came into her mind. Perhaps she could help find the plans—to help troubled Dr. Weeks, to help her government, and, she said softly to herself, to help Bob.

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— . . . — . . . — *chapter four*

The road was typical of many Southern highways—wide and straight, and the scenery was calm and uninteresting. There was a succession of little towns, mostly smaller than Stafford, each with its town square, red brick courthouse, and one-story schoolhouse now shuttered up tight for the summer. The school yards, though, were not empty of children, and vacationing youngsters were busy with swings and slides and jungle gyms in the concrete playgrounds.

Kay was driving, and Flip and Diana peered out of the window, commenting on everything of interest. They were finally on their way to the Thompsonville fair for the prize trip they had won in the scavenger hunt. Kay was wearing the new blue dress her mother had made for the trip, and she looked pretty and fresh as she carefully watched the road ahead.

But her mind was far from calm. She kept thinking about the dinner at the Weekses' the previous night. She already felt personally concerned in anything that happened to them.

Such somber thoughts were put out of her mind, however, with Flip's first delighted squeal of "There it is!" Flip, it happened, was the only one of the three who had ever been to a state fair. Sure enough, the heavy wooden gates of the Thompsonville Fair Grounds loomed ahead. They were gaily decorated with posters that proclaimed the wonders inside, and to the girls, it was like going into fairyland.

First they walked around the grounds, "surveying the landscape," as Diana expressed it. They watched a rabbit-judging exhibit and tried to guess which one would win the blue ribbon. To Kay the rabbits were all delightful, with their squinting noses, their deep, soft, white or gray or black or brown fur. Kay had never suspected that judging rabbits could be so com-

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plicated. She watched the judges lift the animals up in the air, examine their feet, spread their toes apart, look inside their ears, measure their heads, feel their chests, check their tails to see if they were straight or crooked. And then each glossy rabbit was carefully returned to its own basket.

The girls rode the roller coaster until Flip's hair blew in every direction imaginable. They drove tiny racing cars and happily bumped into one another as the small cars, electrically controlled, joggled around a miniature raceway. They threw baseballs at a wooden duck that flopped back and forth on a pole, and Flip won a small rag doll when she amazed herself and her friends by hitting one of the moving birds.

But Diana was more interested in a spelling bee and raised her hand when volunteers were asked for from the crowd. Her friends were content to watch as Diana spelled "eucalyptus" and then "presumptuous" and even "tintinnabulation," until at last only Diana and a tall blond boy remained as finalists.

"Now, young man," said the gentleman who was conducting the contest, "here's a real tough one - 'syzygy.'" He pronounced the word si-si-gee, and Kay and Flip looked at each other with raised eyebrows. They glanced at Diana, but her face was expressionless. She was watching her opponent.

The boy, looking disturbed for the first time, hesitated and then tried: "s-i-s-e-g-e y." There was a question in his voice, which was answered by a head-shake from the man.

"Does Diana win?" whispered Flip to Kay.

Kay shook her head, "Only if she can spell that word right. Otherwise they'll each be given more words until one of them misses and the other doesn't."

Diana, in whom the spirit of competition was always strong, was scratching her forehead and mumbling to herself as she mouthed the word aloud softly.

"All right, young lady?" the man prompted.

"Well . . ." Diana hesitated. "I know it's an astronomical term. How about S-Y-Z-Y-G-Y?"

For answer the man bowed and handed Diana a pair of small field glasses in a beautiful leather case, while the crowd applauded and stamped their feet noisily. Kay grinned delightedly to Flip. "What do you think of our smart friend?"

"Don't know if this is a good prize for a girl," the man said apologetically, "but we didn't know a girl would win."

Diana, who had been flustered for only a few minutes, was now her usual confident self. "And why not?" she asked. "I'm sure I'll enjoy them. Thanks very much."

Flip borrowed the glasses at once, and saw through

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them that somehow they had missed a pony and horse riding ring down at one end of the fair. Immediately they had to walk that way and have a ride. Diana suggested keeping the binoculars in the glove compartment of the Everett car, so the girls could enjoy them when they were together.

Kay and Diana found two handsome chestnut horses they could ride, but Flip, who was a tiny girl, insisted on riding a wild-looking little black Shetland pony.

"He looks dangerous," Kay warned, but Flip had already hopped onto his back and was cantering around the ring, hair flying. Kay and Diana followed sedately on their horses, watching the always gay but often foolhardy Flip.

At first Flip seemed to ride very well. She spurred her pony and kept turning and waving happily at her friends and yelling "Slowpokes!" Then suddenly the pony twisted back the wrong way and ran toward the other horses. It dashed past Diana and Kay—and out the gate of the small pony ring.

Diana dismounted at once and started to follow. The owner of the ring ran out of the gate yelling, "Hey, come back! Come back here!"

Kay hesitated for a minute, wondering what to do, and then swerved her own horse and guided him out of the ring and onto the fair grounds. Once

outside the ring, she gave up her sedate trot and dug her heels hard into the horse's sides, just as she had seen cowboys out West spur their horses when they chased after a stray sheep. "Sorry, horse," she said, "but this is important."

Flip, her hair a veritable halo now, was leaning over the pony's neck. Even from this distance Kay could see that Flip was no longer laughing but was clinging desperately to the saddle.

"Hold on, Flip," Kay called. "Hold tight." But as she shouted encouragement she wondered just what she could do even if she caught up with the flying Flip.

By now the whole fair grounds were alerted, and Kay saw several people try to catch the reins of the wily pony, only to have him leap aside and continue his wild race. Diana was running, too, calling to Flip.

Then Kay, nearing the pony, leaned over and tried to catch the reins herself. The pony seemed to sense what she was trying to do and ran even faster than before. Kay could see the fair parking lot ahead, and she knew she must somehow stop Flip before the pony got onto the main highway where autos were speeding along.

She thought again of the cowboys out West and remembered how they had sometimes jumped from

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one horse to another. Could Flip? It was dangerous, but she felt it was the only possible solution. Though Flip was a good rider—they had all ridden out West, as well as at home in Stafford she couldn't hang on much longer. And she might be thrown under a car if the pony reached the highway.

Kay pulled her horse up beside Flip's and twisted as close as possible. Then, as she came abreast of the other girl she yelled, "Jump, Flip, jump onto my horse, right behind me—"

Flip gave Kay a quick, fearful glance and then leaped. She miraculously landed behind Kay and clung to her. The big chestnut staggered for a moment, and it seemed as if he might go over himself. Flip tightened her grip on Kay, who was already slowing the horse to a walk.

Minutes later Flip and Kay were being helped off the horse by a worried Diana and by the owner of the pony ring, who kept apologizing over and over, "This has never happened before . . . you might have been killed . . . that's a new pony to my ring. I'm sorry."

It was only after the girls had rested and had been given glasses of water that the man was willing to go look for his still running pony.

"Quite an exhibition you two put on," commented Diana, now that she had caught her own breath.

"You should go in for bareback riding in a circus."

"I was terribly afraid my horse would stumble," admitted Kay, "but Flip is so light I thought it was safe."

"Now, if it had been me . . ." laughed Diana. Diana was a trifle on the plump side, but it never worried the self-assured girl.

"Let's ride the merry-go-round now," suggested Flip, already back to her usual gay spirits. "Last one to the big white horse is a rotten egg." She looked ready to run, so Kay put out a warning hand.

"I should think you'd have had enough of horses for a while, but go ahead, you two. I want to investigate that ham set over there."

She nodded toward a banner-covered booth where a complete amateur radio sending-and-receiving station had been set up by the local ham club. Here the Thompsonville amateurs, working in shifts, were keeping the station going for the entire week of the fair.

"It's a sort of amateur radio public-relations plan," Kay explained to her friends. "Bob told me about it. Thompsonville hams hope to introduce the people to ham radio through this station. Then when somebody accidentally tunes his broadcast receiver across a ham talking on the air, or when a ham's own signal happens once in a while to fall in the broad-

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cast or television band right smack on top of Jack Benny or Arthur Godfrey well, the person listening knows what's happening and knows that hams are friendly people who will try to correct any broadcast or television interference."

"It sounds like a wonderful idea," commented Diana. "What are they doing at the station? Just talking to other hams?"

"Oh, no," exclaimed Kay. "It's a message-handling setup. According to the Federal Communications Commission laws, hams can never accept money for their services, but they can send messages all over the world, free, for anyone who asks them."

"A valuable contribution," Diana said.

"Well, go make yours," said Flip airily to Kay. "And we'll make ours to the merry-go-round man." She jingled her coins meaningfully.

Kay wandered over to the booth. As she neared it she found herself hanging back. She was still such a new ham that she felt shy in introducing herself.

But when the boy at the microphone looked up Kay saw that it was the tall blond boy whom Diana had beaten in the spelling bee. He recognized her and nodded in a friendly manner. "Care to send a message to some friend or relative? No charge for the service; courtesy the Thompsonville amateur radio club."

Kay laughed as he reeled this off. "Nope, I just became a ham myself. I'm W4WOW."

He rose at once and shook her hand with the usual pleasure of one ham in meeting another.

"Do you do a lot of message handling? I mean, when you're not at the fair?" asked Kay.

"That's my favorite part of ham radio," the boy answered. "I belong to a radio net, and we have drills and meet on the air every night at eight o'clock. The network operates up and down the East Coast, and hams from all over the country—in other nets—talk with our net members. There are other message-handling trunk lines both east-west and north-south, connecting with each other at various points all over the country. We can usually get a message to any part of the United States within a few hours."

"How do you operate the net?" asked Kay. She had heard of nets and of those hams who were known as "traffic handlers," but she knew very little of the details of their operations.

"Well, I usually get the messages to be delivered from other hams I contact though, of course, anybody can ask a ham to send along a message for him. Then, when I get onto the net, I give my New York traffic, for instance, to a ham from New York who is in our net. My West Coast messages all go to a Chicago ham, who passes them farther along

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to the West Coast. He also takes messages for the Pacific Islands because he, or some Western ham, has a better chance of being heard in that area than we here in the East. That way, traffic moves fast and effortlessly."

"What are you doing today?" asked Kay.

"Oh, just sending routine messages. To cousins and aunts mostly." The boy yawned. "Matter of fact, I'm a little tired. It's all so much the same."

Kay said timidly, "I don't suppose I could spell you for a while and let you rest, could I?"

"Don't see why not," the boy answered quickly. "You're a licensed ham, and this is our club station. Just sign the club call letters, and we'll consider you a member for today. I'll duck out and have a milk shake."

And before Kay had a chance even to ask how this transmitter turned on, the boy was loping off in the direction of the fair restaurant.

"Would you take a message for my wife?" The questioner, a tall farmer, was leading two small girls by the hand.

Kay nodded and wrote carefully as the man spoke: "Having fine time at the fair. Don't forget to feed the pigs today."

As soon as the man walked away Kay turned to the equipment, hoping it wouldn't be too compli-

cated. The boy had left the transmitter on "stand by," which meant that all Kay had to do was to flip the "transmit" switch and she'd be on the air. The receiver was already turned on low, so Kay just turned up the volume and began to tune over the air. She heard a ham from Washington, D C., and then one from Charlotte, North Carolina. The farmer had said his home was only ten minutes outside Charlotte.

Kay turned the black knob on the receiver, and the Charlotte ham's voice came booming into her ears. When he had signed his CQ, Kay began her call to him. She stumbled at first, but after a moment her voice was sure and steady. She leaned back to listen and heard the ham return her call.

How simple it all seemed, thought Kay. Here she was operating a station—with no Bob at hand to advise her—and yet it was all so easy. Now at last she had operated alone. But even in the midst of her excitement Kay sighed as she realized that she still didn't have her own rig. Somehow she couldn't feel like a bona fide ham without her own equipment.

The Charlotte ham promised to telephone the farmer's home at once, and Kay had hardly signed off the air with him before she was deluged with people who had messages.

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“Tell Mamie to meet me tomorrow at three o'clock instead of two-thirty,” requested a stocky lady in a red hat.

“Best regards to Aunt Amy and Uncle Billy.” This was from a friend of Kay's mother, and Kay was proud to sit and chat and explain about ham radio.

Finally she was able to sit back and relax. The crowd had thinned. The blond boy should be back soon; she was happy she could tell him she had started every message on its way.

She was idly tuning the receiver dial when a shadow fell across the table. She looked up to see a swarthy man whose features were almost indiscernible behind a huge spool of cotton candy. The size of the candy spool, plus the man's dark-green felt hat, made Kay smile for a moment.

But the man's words were spoken in a serious manner. “Take a message for me, miss? A message to go to France?”

“To France?” Kay repeated. How wonderful if she could pick up the microphone and talk to France just like that. She hoped she would some day, but distant places were usually easier to contact at night; radio conditions were apt to be better then.

“I guess so,” said Kay. “Not directly, but we can reach a New York ham who will relay it.”

The man picked up a scrap of paper from the

worktable, scribbled across it, and handed it to Kay. She read: "Have met our friend Key Largo. Will leave here with her when the weather gets cooler." It was addressed to "Mr. W. Esch" at a general delivery address in France and was merely signed "C."

The man watched Kay read the message and grunted, "A sort of joke, you see? He'll know who sent it by the initial."

Kay nodded, feeling certain that a ham shouldn't question any jokes anyone might wish to send. She tuned the dial of the receiver now with practiced hand, and after a few tries heard a faint and then clearer call of CQ from a "W₁" ham. Kay knew W₂ hams were from New York or New Jersey.

When the Northern amateur—it turned out he was from New York—ended his call with the traditional ham, "Come in someone, please," Kay was that someone.

She read the message carefully to the other ham and received his confirmation and promise to relay it.* After she had entered it in the log book, she looked up to receive the stranger's thanks, but he had already disappeared into the crowd.

* It should be noted that international agreements governing amateur radio operation strictly regulate the sending of messages to foreign countries.

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Kay shrugged her shoulders. How impolite, she thought. But before she had time to brood about it she was once more busy with prosaic messages—so many that when she was relieved a few minutes later she was glad enough to rest.

As she rose from the table, she automatically put the stranger's scrap of paper—her first message to Europe—into her wallet.

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— . . . — . . . — *chapter five*

It was a few days before Kay went to the Weekses' home again. Bob greeted her with a cheery wave of the hand. "What do you think of that, Kay?" He pointed to an old ham receiver sitting on his workbench, surrounded by bits of condensers and coils of wire.

"Wanted to surprise you, Kay. It's an ancient-vintage job, but well made. A man brought it in for sale cheap, so I thought you might want to fix

it up for your receiver. It's yours for a few twists of your soldering iron."

"Mine?" exclaimed Kay. Suddenly the old radio took on added charm in her eyes. "I'll repair it, and pay for it, too, from my salary."

They went over the radio together and spent the next hour wiring necessary new parts into it and painstakingly checking the tubes one by one. They had the troubles one might expect from an old set. They got it to work, then found it would pick up signals but that it was noisy. They tested to find what part was causing the noise. One of the resistors looked black, and they tried replacing that. Finally they had the set purring.

Kay was thrilled to have at least this part of her station complete. There was still much left to be done on her transmitter, and Bob had sent away for some needed tubes.

After they had finished the repair work for the day and Kay had brought her books up to date, Bob switched on his transmitter and sent out a long CQ. "And this is W4VLS calling CQ, come in someone, please." Bob ended his CQ and began tuning his receiver dial hopefully across the band.

Almost immediately a clear, high voice came droning back, "W4VLS, this is KL7AX, KL7AX at Naknek, Alaska, returning your call."

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"Sounds like a YL. Look her up for me, please, Kay." Bob indicated the *Radio Amateur's Call Book Magazine*, a thick book listing the names, addresses, and call letters of every licensed ham in the world. Kay was too newly licensed to be listed in this issue, but she was familiar with the directory and had already bought one for herself.

She found "KL7AX, Verna St. Louis, Naknek, Alaska."

At that moment the girl was saying, "My husband and I live alone in our cabin here. The OM is a ham, too. His handle is Verne, and mine is Verna. We live in Alaska all year, hunt and trap in the winter—or sometimes Verne acts as guard for one of the canneries—and fish in the summer.

"I keep a ham rig by my side all the time. When the snows get deep it keeps me company and acts as our only contact with the outside world. Verne can kill a bear, and we want to tell somebody how happy we are. Whom can we tell? A ham of course, on the air.

"Then to me it seems like a protection, too. If anything happens, like an accident or a sudden snow-storm, we can get on the air and ask for help from the nearest village. There've been plenty of times up here where ham radio has saved lives "

Kay now remembered a story she had heard about

Verna St. Louis—how the girl had helped save her whole village, when it was threatened by a tidal wave, by using ham radio to bring evacuating planes. But Verna was modestly telling of the heroism of another YL.

"An Alaskan YL saved the day when an air-mail pilot's plane blew out a cylinder head and he had to make a forced landing on Egegik, Alaska. The girl, wife of the government teacher at Egegik, got on the air with her amateur station and persuaded another plane to come from Anchorage. When this plane landed, the mechanics found they couldn't repair the engine. The YL sent out another distress call.

"This time she had a whole new engine flown in. The air-mail pilot could go on his way and the mail could be delivered."

As Verna turned the conversation back to Bob, using the usual ham method of "signing back to W₄VLS," Bob looked at Kay, who was leaning forward, her slim body hunched in her eagerness, her hazel eyes sparkling. "Want to talk, Kay?"

Kay nodded and took the microphone from Bob's hands. She was happy that she knew her ham slang—slanguage she called it so she could say "handle" for "name," "OM" for "Old Man" or husband, "rig" for "transmitter," "73" for "best wishes," and "88"

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for "love and kisses" This slanguage was developed in the interest of brevity on the air, and ham operators use several dozen such terms to save themselves time.

"The handle here is Kay. I know all about you, Verna. I've heard about you from W₄HZP, Jane Carlton, who's worked you in contests. I hope to be talking to you very soon on my own rig."

After Bob finally shut off the rig for the day, he crossed the yard to the kitchen and then came back to the ham shack, carrying glasses of cold milk and a plate of cookies. The Stafford summer was starting its warm stage, and the chilled drink was refreshing.

Kay shyly smiled her thanks at Bob. When they were on the air or talking about radio she never felt shy. But whenever they sat and just talked—and this was the part of her visits that she really liked the most—Kay found herself searching for words. Bob, too, was quiet and would sometimes just smile at Kay with the lopsided grin that made her heart jump.

As the days grew hotter, all activities seemed to begin or end with a cold drink. One day Kay stopped at Miller's Drugstore to have a soda. In the back of the store, a favorite hangout for young Staffordites, she met Flip and Diana, and a moment

later Anna Sporny came in. They all crowded into a booth.

As soon as Kay could break into the chatter about summertime activities she told Anna how enthusiastic the bridge club women had been over Mrs. Sporny's baking. "Remember my joking with you about your mother's giving up house cleaning for baking? Well, I'm sure she could make a success of it," Kay said.

This was a new thought to Flip and Diana, but they were excited about it. "I know my mother will buy Mrs. Sporny's cakes," said Flip. "And mine," Diana agreed.

When they had finished their sodas Kay offered Anna a ride home. She wanted to talk to Mrs. Sporny about her idea. Flip and Diana said gay good-bys and settled down for one more round of sodas.

Kay's enthusiasm about the possible business for Mrs. Sporny grew during the ride. "How about your mother's cousin, Stepan?" she asked. "Since he isn't working yet, maybe he could help your mother in the business."

Anna's face clouded over. "It would be nice, but I don't think Cousin Stepan would be interested. He doesn't seem to care for anything we do."

"That's too bad," said Kay. "Isn't he happy here?"

"I'm afraid not," Anna said slowly. "From some

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of the things he says we think he must regret coming here at all. He thinks Americans are concerned only with silly things, and he thinks our government is pretty silly, too, I'm afraid."

Kay was shocked. She knew how much their new country meant to the Spornys and how much they all appreciated the chance to live here. She suspected from what Anna implied that there already had been bitter discussions in the family. She quickly changed the subject and was rewarded by a relieved look on the younger girl's face.

Mrs. Sporny proved easy to convince. She admitted she was tired of her uncertain, back-breaking day cleaning work. She wasn't nearly so sure of success in the new venture as the girls but she was willing to give it a try. At Kay's suggestion she even helped the girls write out an ad for the local newspaper to announce the opening of the new business.

Kay ran down the steps happily waving the ad in her hand. She dived into the car and started for the *Stafford Times* office, but just as she started the motor she saw Stepan. He was climbing out of a sedan down the block. He shook hands with the driver and started walking toward the house. Kay, thinking it odd he should get out that distance from the house, cruised past him slowly. His eyes were

on the ground; intent on thought, he never looked up.

Kay was coasting so slowly her own car motor died, and just as she was going to start it again she glanced at the car Stepan had left, now pulling out from the curb. In it, hunched over the wheel, was a vaguely familiar profile. And a familiar-looking dark-green hat. There was no candy spool this time, but she was sure it was the man who had given her the mysterious message at the fair.

Curious at the coincidence of seeing the two together, Kay determined to follow the car, now rapidly vanishing from sight down the block. She hastily tried to revive her motor. It sputtered, almost caught, then died. She tried again and was greeted by a whine. She had flooded the carburetor in her haste. She knew that sound and knew from experience that all she could do now was to wait until the carburetor was dry and then try again. She caught one last glimpse of the sedan as it disappeared around a corner, and knew she might as well relax.

But Stepan—Stepan who seemed so disinterested in meeting Staffordites—he must have met somebody. Kay walked slowly back to the Sporny house and knocked on the door.

Almost immediately Stepan answered, "Yes?"

Kay quickly invented a necessary white lie to

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cover her embarrassment, and looked around the steps to see if her gloves had fallen there. Then she turned to Stepan and said in her most casual tone, "I noticed you down the street getting out of a car. That man who was driving looked familiar. Is he from Stafford?"

Stepan's face remained absolutely blank, though Kay thought she caught a glimpse of steel in his eyes as he said politely, "I don't know where he's from. He just gave me a ride home from town. Good day, miss."

He turned into the house, and Kay walked down the steps with a furiously blushing face. She felt like a fool for her amateur detective activities when she had so little evidence to go on. But, still, Stepan had certainly seemed friendly with the stranger.

She reached into her wallet and pulled out the message given her by the man at the fair. She read it to herself again. It made no more sense than it had earlier. Yet somehow she felt it had within it the clue to many things that puzzled her.

This time the car started with ease.

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— . . — . . — *chapter six*

“Hello, CQ, Thompsonville, calling any Thompsonville ham,” Bob’s voice rang out in the clear fresh air.

It was a beautiful summer day, perfect for a Field Day, all the hams agreed.

“Field Day?” echoed Kay in answer to Flip’s question. “A sort of amateur picnic contest. Mainly it’s a chance for hams to test their battery- and generator-powered equipment under close-to-emergency con-

ditions. There's a national field day held some time in June every year when ham clubs all over the country set up portable equipment in the fields and talk over the air. They spend months preparing, finding the best locations and the highest trees to hang the antennas from."

"I only wish it were still June," said Flip wistfully. "Our vacation days are just flying by. They're half gone already."

Kay nodded agreement. It was turning out to be a wonderful summer, with ham radio and Bob and all, and she, too, hated to see the days disappear so quickly.

"This is a different kind of field day, Flip," she continued "The individual ham clubs sometimes have their own local field days, and this one is a contest for Stafford hams to contact as many Thompsonville hams as they can."

"So that if the river ever overflows its banks hams will be ready to get on the air and call for help?" teased Flip, thinking of their placid stretch of waterway.

Kay smiled, pleased that Flip remembered some of her enthusiastic chatter about the things hams did. But her answer was serious. "Yes, hams would be ready for that, and if the power lines here ever did go down, hams would use their rigs to keep in touch

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with the Red Cross and government agencies and have food and medicine sent in. Whenever normal communications have gone out in floods or storms, ham transmitters have been ready to take over.

“But this particular field day is to prepare hams for another kind of possible emergency. Most hams today are interested in civil defense. Bob’s the Emergency Co-Ordinator of Stafford’s Civil Defense Net, and in case of a national war emergency hams would be expected to have their portable equipment ready. We’re using those transmitters today to practice under emergency-like conditions.”

Flip had been listening intently—for Flip—but now she peered humorously at the bright midsummer sky. “Looking for an emergency?” laughed Kay, putting aside her momentarily serious mood. It did seem silly on such a bright, pleasant day.

The large meadow was filled with hams, mostly seated on bridge chairs and with card tables or small camp tables set up in front of them. Each one had a portable rig on his table. Next to it was his log book in which he kept the records of each contact; it is a law of the F.C.C. that hams note down every communication for possible future reference. Most hams follow the government rule just as carefully as they follow the other simple laws that have been set up to help them operate efficiently: taking the required

tests for an amateur license, keeping on the specific bands set aside for hams, obeying the laws that limit the amount of power and what type of equipment a ham can use.

According to official description, ham radio is "radio communication between amateur stations solely with a personal aim and without pecuniary interest." It is the only hobby established by international treaties and federal laws, and the only one whose practice is limited to persons tested and licensed by the government.

It was Bob's turn at the microphone. Kay and Bob were acting as a team in the contest. Kay had just finished her stint and was now showing Flip around the grounds. They wandered over to a booth where Anna, Karel, and Mrs. Sporny stood.

It was Kay's idea that not all the hams would remember to bring lunch—or at any rate they would get hungry during a whole day out in the open—so Mrs. Sporny had set up a field booth for the day.

Mrs. Sporny's baking was turning out to be a huge success. Now she was busily handing out kolach and strudel and slices of her special *tvorohavy paj*, or cottage cheese pie, while Anna and Karel made deliveries around the field.

"How's it going?" asked Kay.

"Kay this was a wonderful idea," Mrs. Sporny

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beamed. "And, Kay, I have something to tell you."

Mrs. Sporny looked so much less tired and careworn that Kay felt a thrill of pleasure.

The woman continued, "I've given up my house cleaning altogether, and business is so good that we hope to be able to move to a better house by the end of the summer if all keeps on so well."

Kay was delighted, and like the other hams, she enjoyed her Czechoslovakian lunch. Even Bob sauntered over, announcing, "Everybody's taking a quick break for lunch now."

They ate and leaned back against the grassbank, watching the fleecy clouds drift by. Suddenly Bob said out of the blue, "Care to go out with me tonight, Kay?"

Kay sat bolt upright. She managed to make her voice casual, though her mind was whirling. She'd hoped so often to have him ask her for a date, so that he might see her as a girl, not only as a ham. She felt sure it was just the fun of Field Day that prompted the suggestions; still, a date was a date. And a chance to look pretty and hope he'd notice.

"Yes, I think I can make it, Bob."

She had leaned back contently on the grass when a touch of worry entered her mind. "Where's Flip?" Whenever Flip was absent for long Kay knew there

was bound to be trouble. She hadn't seen Flip for the past half-hour.

They both jumped up and hurried back to the radio operating table. Sure enough, there was Flip—in tears—and with a hammer in her hand!

Kay ran over quickly to the sobbing girl and shook her gently. "Flip, stop crying. What's wrong?"

"Your set. I ruined it. You're off the air. You can't win the Field Day contest." Kay stared at her incredulously, but as she turned her eyes to the rig she gasped in disbelief. The main big tube of the transmitter was shattered and lay in pieces on the ground. Bob, too, exclaimed and jumped over to examine it.

"I came over to look at things while you were eating—I just wanted to see the transmitter close at hand. That tube was loose. So I picked up the hammer and gave it a tiny tap to push it in properly. It broke right away." Flip burst into fresh sobs.

Kay put an arm around her shoulders to comfort her, but she felt troubled. The contest meant a good deal to Bob, as local Civil Defense head—and to Kay, too.

But Bob broke into her thoughts. "It's okay, girls. C.D. workers always have spares for all parts. The set will be going in a jiffy."

"Flip," he said gravely as he turned to her, "I'm happy to see you're getting interested in ham radio."

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However, please confine your interest to watching. We'll keep our own tubes in tight, thank you."

Flip humbly agreed and moved back to watch from a nearby bank of grass.

Kay laughed. "She'll be repairing them for us again in two days if I know Flip." Bob shook his head in despair and went back onto the air.

His first afternoon contact turned out to be Arnold, whom Kay remembered as the tall blond ham from the fair station. Kay took the microphone. "How are things in Thompsonville, Arnold?"

"Can't take time to chat, Kay," said the other, intent on the contest. "But Thompsonville has had its share of troubles lately. The news just broke in the paper today. It seems some saboteur has been at work in our new airplane factory. Things have been going wrong in the planes on the assembly line. Several test pilots were nearly killed before the trouble was ironed out. They kept it quiet as long as they could, I guess so folks wouldn't get upset and so they could try to catch the saboteur first.

"Now everybody seems to be doubting everybody else, since no one knows who did the sabotage. That sort of thing has never happened in Thompsonville. We've never had trouble of any kind. Police say it must be spies."

Kay and Bob looked at each other with worried

eyes. It was a terrible thing to think of friends and neighbors doubting one another and, worse, to think of America's defense effort being sabotaged. Kay again thought of Dr. Weeks' still unsolved troubles and of his missing plans. She sighed. She had hoped so to help him and Bob, but no opportunities had arisen. "I'll do it yet," she whispered.

When the scores were tabulated, Bob and Kay found they had placed second in the contest. "That's thanks to all those Thompsonville hams you snared this morning," said Bob.

Kay protested, "Oh, that was just because they knew I had operated their club station at the fair."

"I doubt it," said Bob. "I think it was just good operating, but, whatever the reason, you handled the rig very well."

Kay blushed at the unexpected praise. To have him congratulate her as a ham was the highest praise he could give, she knew.

All the way home Kay smiled with pleasure at what Bob had said and at the thought of her date that night.

She carefully made ready for the evening, wearing the new blue dress her mother had made for the trip to the fair. While Mrs. Everett inspected Kay's appearance Mr. Everett began to two step around the room and to whistle "Beautiful Lady in Blue," much

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to Kay's embarrassment. She only hoped he'd stop before Bob arrived.

For the tenth time Kay asked her mother how she looked, and was reassured. She wondered where Bob would take her on their first date together.

She was still wondering as she and Bob walked out to his car. She thought of all the places the girls and boys her age usually went to on dates. They sat in the booths at Miller's Drugstore for sodas and danced to the jukebox. They went to the Palace Theater on Saturday nights, where they always congregated in the first balcony and ate peanuts. And then some of the more daring would drive out to Mooney's Tavern, a sort of night club out on the main highway, which had its own small band.

Bob hadn't mentioned where they'd go, and Kay was so happy to be with him that she didn't ask. But when he turned his car onto the highway she began to feel a little uneasy.

Suppose he stopped at Mooney's, what would she do? She knew without question that her mother wouldn't want her to go there, and yet if she refused, Bob would probably think she was a sissy and never want to take her out again. After all, Bob was in college and probably dated college girls who went to taverns.

Bob was quiet that night. Kay kept glancing at him

from under lowered eyelids. He had said little once they started driving. Could he be wondering whether or not to go to Mooney's? But he seemed to be driving so purposefully.

Soon the bright lights of the tavern loomed up out of the darkened highway. Kay suddenly decided that if he stopped she would simply tell him that her mother didn't care for the place. He might never see her again, but she had to chance that.

She sat up straight.

Bob passed Mooney's without even a glance in its direction and turned up the Thompsonville Road to Lover's Leap.

Now Kay was really mystified, but she was excited as well.

He must just want to sit and talk and look at the moon. It was a beautiful clear night, and the moon was almost full.

"Here's the spot." Bob pulled over to one side of the road and into a clearing just below the trail that led to Lover's Leap. "This is the best spot in the state for very high-frequency work. I have a new portable rig I want to try out. Just finished installing it yesterday." He indicated a compact receiver and transmitter he had placed under the dashboard of the car.

Kay knew that Bob loved to experiment with the very high frequencies—those upper reaches of the

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ham bands where contacts are often difficult to make; each satisfactory QSO (slanguage for "contact") is considered one more step forward toward conquering those still-experimental frequencies.

But tonight, for once, she had thought Bob was taking her out as a girl and not as a fellow ham. For a moment she felt tears sting her eyes. Then she shook her head. After all, she was an amateur, and she, too, was interested in contacting other experimenters. The added boost of the hill location might carry their signals a long way.

Besides, in his own way Bob must like her to want her along on this special occasion.

The location was excellent, and conditions on the "very highs" were good.

Soon both Kay and Bob were chatting very happily with hams a couple of hundred miles away—with other adventurous-minded persons similar to those experimenters of thirty years ago who had first proved the value of amateur radio.

Placed on frequencies of two hundred meters and down, which were considered useless in those days, hams had not only shown the usefulness of these wave lengths but they had finally even spanned the globe with them.

As soon as American amateurs were able to contact one another with relative ease they began won-

dering if they could talk to amateurs on the other side of the Atlantic. Amateur DX can be said to have started in 1921.

After a number of fruitless attempts to cross the ocean waves, the American Radio Relay League set up a plan that would surely work if the equipment of the day were adequate for overseas operation.

An American amateur, Paul F. Godley, 2ZE, an expert on receiving equipment, was sent to England to set up receiving equipment and listen at pre-arranged times for American hams.

Paul Godley sailed on the *Aquitania* on November 15, and a month later he was being royally entertained by British hams. He placed his receiving equipment at the edge of the sea—as close to America as he could possibly get in a flimsy tent on a windy and foggy moor.

When the time for the transatlantic test came, Paul Godley waited and listened, while in America hundreds of hams excitedly prepared their equipment for the big test.

More than thirty American amateur stations were heard by Paul Godley and by a group of British experimenters who were also listening. The glaring type in *QST*—the amateur magazine—read: "Oh, Mr. Printer, how many exclamation points have you got?"

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Trot 'em all out, as we're going to need them badly, because **WE GOT ACROSS!!!!**"

The next objective, of course, was two-way communication. Since Americans had now been heard overseas, surely they could talk to European hams as well. In November, 1923, after many months of preparation, three American amateurs conversed for several hours with Leon Deloy, 8AB, in France, on shorter wave lengths than the conventional two hundred meters. Two things happened: The era of amateur DX was born, and hams began to make use of shorter and shorter wave lengths. That experimentation has never ended.

Kay was proud to be part of modern experiments on today's lesser known bands.

She thought of the exciting history of amateur DX, and as they pulled up in front of Kay's house she leaned back happily. "It's been fun," she told Bob, and she meant it. It had been an exciting evening, and her early chagrin had fled long before. Hams, she knew, were often so wrapped up in their hobbies that even married hams might spend hours and hours each night tinkering with their sets or operating on the air.

"I have a surprise for you, Kay." Bob got out of the car, reached over to the back seat, and picked up a heavy package. He tore off the wrappings.

"My transmitter!" exclaimed Kay.

"The output tube finally arrived today," Bob said. "So I tried it out. It works like a charm. You should be proud of it. You did a good job, Kay."

"With your help," Kay added. Her eyes were sparkling. At last her set was complete. She could now operate whenever she wanted to. Like other hams, she could describe her own equipment, could talk about her rig and the way it operated. At last she was on her own.

"Oh, I helped, but you did most of it," Bob said. "And even if you get a big commercially built transmitter with high power some day, you'll still be proud of that little breadboard job you built at seventeen."

Mr. and Mrs. Everett were still in the living room when Bob escorted Kay to the door, so Kay turned to her mother and asked, "May Bob come up to my room for a few minutes and help me set up my rig?"

"For just a minute," Mrs. Everett agreed. She knew how much Kay had longed for this moment, and she didn't want to spoil it in any way.

Bob carried the transmitter upstairs and helped Kay connect a switch to the antenna wire she had fastened a few days previously from her receiver to a nearby oak limb. "You can use that wire as your antenna for tonight," said Bob, "and I'll come over

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tomorrow and help you put up a real one. When you run low power the antenna's height is even more important than usual, for you need every boost you can give your signals."

After Bob left and Kay's parents had gone to bed, Kay decided to turn on the transmitter for just a few minutes. She had had many contacts already, but this one would always stand alone. She sent out her CQ in a tremulous voice and was surprised to hear a faint reply. "Calling W₄WOW, W₄WOW . . ." the voice faded and then became louder but was still so faint Kay was sure this must be a foreigner. The ham began to sign; it was another North Carolina ham who was simply not putting a strong signal in Kay's direction. But Kay's disappointment disappeared with the excitement of working her own rig. And though the talk was routine, Kay found it exciting enough.

She described her rig lovingly, told about each detail of its construction, and the ham, in true ham fashion, was fascinated to hear about each coil, each resistor.

Kay's next contact was with a ham from West Virginia, and then she herself sent out a CQ which was answered by a friendly, breezy voice that described its owner as "Maude Phillips, VE6MP, from the windy plains of Alberta, Canada."

Maude, it turned out, was the general storekeeper



in her town of Chancellor, Alberta, a village of thirty-five people. Like so many YL's, she had become interested in radio through the inspiration of her husband, Glen, already a ham.

Maude said in her rich voice, "The darn set was such a nuisance around the house when I needed a few little things done, such as lighting fires or taking out ashes, that I decided the only solution was to get into the game myself. Now I love ham radio as much as Glen, and he has trouble getting his hands on the mike! The hams around here are all friendly. They call me 'Mamma's Pet' for the 'MP' in my call, and tease me constantly about it."

"By the way," asked Maude, "since you're a new YL, maybe you haven't joined the Young Ladies Radio League yet?"

When Maude signed back to Kay, Kay quickly flipped the switch back from receive to transmit. "No, Maude, I don't belong to the YLRL yet. But my friend Jane Carlton, W₄HZP, told me about it. Jane said girl hams from all over the world belong to the national YLRL, and that there are local groups in many cities."

Maude offered at once to sponsor Kay for membership and gave her the name and address of the secretary of the YLRL. "How'd you become a ham, Kay?" she asked.

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Kay told how she had been introduced to ham radio by Jane. "It all started last year when four of us were traveling out West in a trailer. When I watched Jane, W₄HZP, operate her ham set I kept wanting to go on the air myself. Jane began to teach me about ham radio, and then on my birthday last year we camped out in the strangest spot imaginable. It was at Craters of the Moon National Monument, the site of a former live volcano. Well, Jane and my friends, Flip and Diana, gave me a code practice buzzer-and-key set to learn the code on, and some how-to-become-a-ham pamphlets, and the *Radio Amateur's Handbook*. I started studying for my license then."

The conversation continued for another half-hour. Kay was learning how truly enjoyable a fine radio conversation can be. She learned about Maude's ranch and the mountains Maude could see from her window, mountains perpetually covered with snow. In her mind Kay saw the mountains and imagined life in Chancellor, Alberta.

After Kay's chat with Maude she glanced at the clock. It was getting late, but she decided to try just one more CQ and then go to bed. She sent out another CQ and then tuned the dial again.

Almost immediately a voice began calling her call letters. The voice—also definitely a soprano—signed

its call letter quickly. It was an "F"—a French YL!

Kay was so excited she could hardly keep her voice steady. DX! Her first contact in the pursuit of the distant stations that so fascinated her.

The French girl, whose name was Marie, seemed as excited as Kay at the contact. She, too, was a new ham, and Kay was the first American she'd spoken to. Kay marveled at her perfect English until Marie said that, like so many Europeans, she had studied English in school. But she also assured Kay that English was so close to becoming a universal language that nearly every ham she knew had enough English to converse with Americans. And then, of course, Kay and Marie, like all hams, were able to use the well-known amateur abbreviations, which are known internationally.

Marie told Kay about her family. Her father was a professor at a French university, her uncle held a high position in the Sûreté, France's secret police. Marie herself, about Kay's age, hoped to teach school some day.

"Kay!" The voice from the doorway was stern and angry. "It's after three o'clock. What are you doing up? No daughter of mine—ham or not—is going to sit up all night! Thought I told you to be in bed by midnight."

Kay took one look at her father's face and quickly

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began to sign off with Marie. She hated to cut short their talk, but they agreed to meet weekly at the same place on the dial whenever atmospheric conditions permitted, but earlier in the evening. Kay knew conditions for DX were usually best in the wee hours of the morning. But she knew from her father's expression that there was no use arguing now. He still didn't fully understand or appreciate ham radio, she realized, and she had yet to prove to him the value of being a ham.

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— . . . — *chapter seven*

The next morning a sleepy Kay was awakened by a great uproar. It was a piercing whistle that finally made her struggle out of bed and to the window, and the sight below really awakened her. There was Diana in her riding breeches, Flip in blue jeans, Bob in his work pants, and behind them half the hams of Stafford were clustered in the yard, all wearing a motley collection of shorts, jeans, or jodhpurs.

Kay blinked her eyes several times to make sure she wasn't still sleeping. "What's up? Masquerade for town hobo?"

"That's appreciation for you," scoffed Diana. "Bob got us all up at the crack of dawn to come help you raise your antenna to the tallest possible tree."

"That's right," Flip echoed. "We're here for the antenna-raising party. I even brought the doughnuts."

For a moment Kay could not speak. Her voice felt all choked up, and her eyes were full of tears. Her friends and all those hams she scarcely knew had come to help her put up a high antenna. It was an old ham custom, she knew, but so very thoughtful.

Bob skinned up the tall oak while two of the other boys set a ladder against the side of the house and climbed to the roof to tie the antenna wire to a heavy rope. They tossed it to Bob. After one miss he caught the rope and began to climb to the highest branches of the tree.

Kay held her breath. One slip, and she could imagine Bob falling a long drop to the edge of the Everett back yard. He disappeared from sight in the foliage. Kay threw on her clothes hastily and ran downstairs.

Just as Kay came out into the yard Bob began

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sliding back down the tree. "All tied at this end," he called.

The boys on the Everett roof climbed through Kay's window and into her bedroom to fasten the other end of the wire to the rig. The antenna was now ready, an aerial Kay knew she could use for both her receiver and transmitter by means of a "switch-over control."

Everyone now trooped into Kay's bedroom ham shack. When Kay began to thank them, still overcome by their thoughtfulness, Flip broke into her friend's mood by grabbing the first doughnut. "This is the best part of an antenna-raising party," she said.

Kay smiled and took a doughnut, but she thought to herself: The best part is the interest in other hams that all amateurs seem to have. The next best part will be later, after they go and I try out my rig with its new antenna.

When they had gone, and for the next week, Kay was seldom off the air. Often Flip and Diana would come over. Flip was actually beginning to study the code, and Kay, as a true ham, was enthusiastic about teaching her. She gave Flip the code practice set—consisting of a sending key, a dry-cell battery, and a buzzer to make the noise she herself had used to practice code, and a copy of a pamphlet entitled, *How To Become a Radio Amateur*. Flip was so

engrossed that she walked around town, head in the clouds, spelling out in code every advertising sign she saw.

Even Diana, always hard to convince, found herself enjoying a frequent chat on the ham set—especially since it helped her with her own hobby of collecting newspapers from all over the country to study. Diana had just finished a year as editor of her school paper and was hoping to be a newspaper reporter some day. The trip out West the previous summer had helped her collection considerably, and now hams that Kay contacted sent Diana copies of their home-town papers.

One day Diana came in and interrupted Kay and Flip at a rag chew—ham conversation—on the air to suggest that they take a ride up into the North Carolina mountains into remote Madison County, an area so primitive and inaccessible that it is called “The Land of Do Without.”

She had heard of a newspaper written entirely by hand on parchment scrolls by an elderly North Carolinian and delivered by him each week to his fifty mountaineer subscribers. Diana was sure this would be a unique addition to her collection. Flip suggested Anna Sporny might enjoy an afternoon’s drive and a chance to see more of the state, and Kay agreed enthusiastically.

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Action followed thought. Anna was happy to join them, and the four girls soon left Stafford behind and curved up the first of several roads leading to the town of Murphysville, where the editor lived. At first there were brown and white farmhouses with cows grazing beside them and an occasional group of tan pigs snuffling near a fence. There were even a few suburban-type homes of red brick with shiny station wagons out in front. These looked out of place, and as the country grew more rugged and the road rougher, even these few disappeared.

While Kay drove, the other girls admired the scenery, which grew more beautiful mile by mile. There were deep, magnificent forests of poplar, oak, and majestic long-leaved pines, and as they climbed higher, tiny mountain flowers began to peek out—at first timidly and then splashing gaily across wide meadows. There were paintbrush, wild carrot, yellow lilies, evening primroses, asters, and thousands of mountain daisies, making a colorful carpet.

Anna's dark eyes were bright with pleasure as she gazed at the landscape. Once she sighed, "It's so beautiful. I wish Mother and Karel could see it—they'd enjoy it. And Stepan, too," she added thoughtfully. "If he knew America better I'm sure he would love it more." She leaned back in silence again, watching the endless fields of flowers.

Across this carpet scampered cottontail rabbits, opossum, raccoons, minks, gray and red foxes. Kay's companions constantly called out to her to look here or there, and it was all she could do to keep her eyes fastened on the road. But she needed her full attention, for the road was no longer paved but was now of red clay and at times deeply rutted. It began to darken, too, and Kay, glancing around the desolate landscape, called out to Diana, "Anywhere near Murphysville? I'd hate to get caught up here after dark."

Diana glanced at her map and nodded. "Not too much farther."

"It better not be," muttered Kay as she twisted the car to avoid large, gaping holes that now peppered the road.

Diana turned from her map to look at a North Carolina guidebook she held in her lap. All three girls had learned on their travels in the West to use guide and travel books so that when they visited a new area they knew something about it in advance.

"Listen to this." Diana's eyes were wide and startled. "In primitive Madison County illicit liquor is sometimes made from the corn the mountaineers grow. The moonshiners call the liquor 'corn juice.' The making of it, called 'blockading' by the moun-

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taineers, has caused numerous feuds that have given this region its old name of 'Bloody Madison.'

"Those men who are known to have given information to revenue officers about the blockading have been shot from ambush, and then their relatives retaliate in kind. Soon a full-fledged mountain war begins.

"The feuds also start over rivalry in love, a fist fight, or even the whipping of a neighbor's dog. These days most families are law-abiding and honest citizens, but a few in the area still rampage and terrorize."

"Zumpie!" Flip was leaning over Diana's shoulder as she read. "You mean that's the kind of country we're going into?"

The girls shivered and glanced about them. "What's that ahead?" asked Kay. "A thunder cloud?"

The haze ahead turned out to be a swarm of giant winged insects. They were the largest dragonflies any of the girls had ever seen, and they swarmed around the car, hitting the windows and sticking to the windshield. The girls quickly ran up the windows, and Kay drove grimly through the horde.

The air inside the car was soon uncomfortably hot, and the girls were glad when the last fly finally flew away.

"Zumpie!" called Flip. "Now look at that!"

"That" turned out to be a shack nestling against the side of a small mountain. It seemed actually to cling to the mountain itself. And beside it was an ancient car—with a goat on its roof! Nonchalantly, gazing about him, the goat acted as though standing on a car were the most natural thing in the world for a goat to do.

Even the clay finally disappeared, and was replaced by deep North Carolina red mud. As the road grew more narrow it was sometimes hard for Kay to keep the side of the car from scraping against the mountain. "All I need is for another car to pass me," she thought to herself as she spotted a faint cloud of dust in the distance, which actually did materialize into a car.

Kay pulled far to the right and slowed the car's pace to a crawl. The other car, a rickety sedan that had once been bright blue, just managed to rattle by without touching Kay's fenders. The driver's expression was so disinterested that Flip had to laugh out loud. "Probably loses at least one fender a week on these roads."

"One fender?" muttered Diana cynically. "Does he have one left to lose?"

"I don't believe it," said Kay as she pointed ahead of her. "There is actually a town named Murphysville." Ahead of them in the fast gathering dusk was

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a battered sign that proudly proclaimed: Murphysville, North Carolina. Population: 126.

Diana gave a deep sigh of relief. Secretly she was feeling somewhat guilty about bringing her friends along on what had begun to seem like a wild-goose chase. She had actually started to have fantastic thoughts that the town might disappear before they reached it. She remembered the story of Roosevelt, a town in Idaho that had become a lake overnight when a flash flood had rushed down from the mountains. Flyers going over the rugged Idaho mountains can still see logs from the town floating in what is now called Roosevelt Lake.

But Murphysville was still there—what there was of it. A few scattered houses and then the usual small-town square. With a sigh of relief Kay pulled the car up in front of a drugstore, the only building showing any sign of life.

Diana hurried eagerly into the store.

"Let Diana be on the quest of a newspaper or a story and she'll run," laughed Flip, "but any other time you can move a mountain more easily."

It was true that pudgy Diana was not inclined to exercise if she could avoid it, but she was indefatigable in her determination to become a famous newspaperwoman.

She hurried out of the store, nodding excitedly.

She had a hand-drawn map in her hand. "Colonel Evins lives about a mile ahead, and the druggist says he knows he's home. He never goes out except to deliver his paper or for provisions. The druggist says Colonel Evins lives all alone in the biggest house in the county. He says it's a famous house because all the material to build it was dragged up the mountain by oxen years and years ago."

With Diana directing, it was only a matter of a few minutes before Kay drove up a curving driveway to stop in front of a scene that made them sit and blink. There, set in a grove of pines, was a massive, square house, with big white pillars and broad white steps. It was a Southern mansion of the type Scarlett O'Hara lived in. Kay caught her breath at the charm of the picture. Old-time Southern aristocracy, she thought. But then, as she looked closer, she saw that the pillars were beginning to crack, a stone lion at one side of the steps was missing an ear, and the vines had been allowed to trail recklessly across the porch.

Flip, Anna, and Diana hurried ahead, and Kay walked slowly up the steps. It was a lovely spot, and she could imagine what life here must have been like once: the gay parties with pretty girls in long, lacy gowns, and the lean, handsome men with courtly manners. A little sigh escaped her as she glanced

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down at her practical blue jeans and scuffed oxfords.

But the old gentleman at the door seemed to have some of that air she was dreaming about, as he bowed over each girl's hand with a flourish. He ushered them into a chandeliered living room in which the deep velvet carpet with its frayed corners bore out the proud but decayed atmosphere of the entire house.

"I was just getting ready to have some afternoon lemonade. Won't you join me, please?" Without waiting for a reply he went out of the room and appeared a few minutes later bearing a tray of cookies and a pitcher of lemonade. "Forgive me for not offering more, but I live simply these days, now that I'm all alone." Kay felt a twinge of pity at the note of loneliness in his voice.

It was only after they were munching cookies and sipping the cool lemonade that he turned inquiring eyes to the girls. And only then did the usually so direct Diana tell him of their mission.

From a beautiful old cherry desk in a corner of the room the Colonel pulled four copies of his newspaper and handed one to each of the girls. Written entirely with pen and ink and in a spidery and sometimes wavering hand it told of the neighborhood happenings—even detailing what happened to the community's bird bath during a freak ice storm, and how

some of the townspeople had rigged up emergency bird shelters and baths with pots and pans.

Diana sighed with joy. As homespun journalism it would certainly add a unique touch to her collection. She looked at Kay as if to suggest that they had better start back soon. Kay gave her an imperceptible nod but also a "wait-a-minute" look. Kay knew it was almost dark now and that the return trip would be no easy one, yet she felt reluctant to hurry from this charming old gentleman with his rather forlorn smile.

It was Flip—kind and impulsive Flip—who asked the question. "Can we do anything for you in return for your hospitality?"

The Colonel shook his head. "My wants are few. I'm all alone now that my son moved to Richmond. My wife died years ago. That's why I keep myself busy with my newspaper just to help pass the time away."

Kay had an idea. "Talk to your son often, Colonel?"

"No," he answered, more than a little embarrassed, "I can't afford long-distance calls often now. Don't even have a phone any more."

Kay sprang to her feet impulsively. "Colonel, I'm sure my parents would love to have you spend a

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night in our guest room. Would you like to come back with us tonight?"

The Colonel as well as Kay's friends looked mystified. Kay continued, "I have a schedule with a ham in Richmond tonight. I just happened to arrange it last week. I'm sure he could get your son to the microphone for a wonderful chat."

It took a few minutes of explanation, with Kay and Flip and Diana interrupting one another and even quiet Anna putting in a word or two, to tell about Kay's ham set and what a schedule was.

Still the old gentleman looked hesitant. Finally he said, "Well, to tell you the rest of the story, when my son left here two years ago I told him if he moved up North I'd never want to talk to him again, and I haven't spoken to him since that moment."

"Up North?" exclaimed Flip. "Zumpie! A lot of Virginians wouldn't agree with you on that."

Diana silenced her with a look. She knew that some old-time Southerners still drew their Northern boundaries pretty far south.

"Come on," begged Diana, stepping out of her usual sedate character to help carry through an act of kindness. "I'd love to talk to your son, too."

Flip chimed in, and soon the four girls and the Colonel were in the car and on their way back to Stafford.

It was late when they arrived at Kay's house, and her parents were watching a little anxiously from the porch. The Everetts were obviously surprised at the procession that marched up the steps, but, like the good sports they usually were, they welcomed the group graciously. Mrs. Everett just added some more plates to the dinner table and brought out the large bowls of salad she had been keeping cold in the refrigerator.

Later that night, when Kay's Richmond radio contact was able to get the Colonel's son to the microphone, it was worth all the trouble. The old gentleman's lined face smoothed and then creased into a happy smile. Even his voice sounded younger. His son seemed tremendously happy at this sign of interest on the Colonel's part, and before the QSO was ended, plans had been formed for a visit to the ancestral home in Murphysville in the near future.

"Another triumph for ham radio," muttered Diana.

Kay tossed her log book at her, while Flip, not noticing the teasing sarcasm in Diana's voice, exclaimed, "Zumpie! I can hardly wait to become a ham myself! Dah . . . dit . . . dah . . . dah . . ."

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— . . . — . . . — *chapter eight*

Kay spent every minute when not on the air at work in Bob's repair shop. The job interested her as much as ever. In fact, it was due to Kay that a real boom in business began. She mentioned Bob's repair business to the owner of Stafford's biggest department store and made a sign for the front lawn, proclaiming that "Bob's Radio Repair Shop" was open for business.

The first move brought an offer from the depart-

ment store for Bob to do their radio repair work on a "per set" rate, and the second—the sign—had both neighbors and strangers dropping in with their radios. One of these sets was an old foreign made short-wave receiver. It was left with Mrs. Weeks, who said the man who had brought it, a foreigner himself, told her he must have it in time for the nationwide DX contest in a few weeks.

"Probably a short-wave listener," commented Bob to Kay. "They get as excited about contests as hams do sometimes and try to hear as many DX stations as they can. Some of them keep logs, just as hams do, and some even have cards printed like a ham's QSL card that they send to hams telling when they heard them and how well the signal came in. We'll have to rush this set through."

Kay, too, had already received cards from SWL's—short-wave listeners—and knew how avid they could be in the pursuit of their hobby. She had stuck the cards in a file box with her small but growing collection of QSL cards. These cards, much like calling cards for hams, were sent by amateurs to confirm contacts made on the air.

Besides the ham's call letters, usually printed in large letters, they described the owner's radio equipment, gave his address, and confirmed the radio conditions that had existed at the time of the contact.

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Kay planned to save every card she ever received, and for weeks she had been visiting the neighborhood printer trying to decide what kind of QSL card she should have printed for her very own.

Mr. Pritchard, the printer, was indulgent but puzzled by Kay's insistence that she must have the "right" card. He showed her dozens of brightly colored cards he had made for other hams, while Kay excitedly looked over his shoulder. There were all kinds: cartoon drawings with funny pictures of hams at work at their radio equipment; simple cards with just the amateur call letters boldly printed across the front, some even had pictures of American flags or of Uncle Sam at a radio key.

Kay looked and looked until she had seen them all, but still she felt undecided. The printer smiled at her teasingly. "I can see ham radio is going to be your whole world, Kay."

"World!" exclaimed Kay. "That's it. My dearest ambition is to contact hams all over the world with my own station. So why not have a map of the world showing all those exciting places I hope to talk to some day soon, and have my own call letters encircling that globe!" And thus Kay's QSL card was designed.

One day Kay took time to meet Diana, Flip, and Anna Sporny at Miller's Drugstore. She hadn't

seen Anna in a long time. Furthermore, Diana had asked Anna to bring her a Czechoslovakian newspaper for her collection, and Kay was eager to see it, too.

The sodas at Miller's were as good as ever, but Kay felt a little troubled when she saw Anna looking pale and worried. She realized with a twinge that she'd been so busy with her ham activities that she hadn't seen much of the Spornys lately.

The paper Anna brought was one she had found in her uncle's room. Not knowing the language, the girls could only look at it with interest and then hand it back. "Translate it for us," suggested Diana.

For a minute Anna had a hesitant and uneasy look on her face, but then she began reading aloud. "The United States today is in a state of great unrest. In every town war preparations are going on. Weapons are being manufactured at home in every family, even by the smallest children. These are weapons that will some day shower down upon you and your little ones in an unprovoked assault . . ."

Kay and Flip exclaimed with surprise, while Diana jumped to her feet. It was Diana who put her finger on the situation at once. "That's Communist propaganda. That's a Communist paper, filled with lies . . ."

To Flip it was already a joke. "Wait'll you see the

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weapons I've been making. Why, I have the best collection of slingshots . . ."

Kay had to fight to keep her own face serious after this remark, but she turned to Anna and said gently, "Anna, surely you and your mother are not Communists?"

The girl shook her head. "It's Stepan," she whispered. "Mother is sure he's a Communist. I've heard them having quarrels about it. He's been telling my brother things Mother doesn't like—Communist teachings."

"Why doesn't your mother ask him to leave?" asked Diana bluntly.

Anna shook her head. "She doesn't think she should. She feels responsible for Stepan in a strange land, and she's hoping that by seeing what America is like he'll change his opinions and feeling."

Kay sensed behind the girl's quiet words a dramatic situation, a desperate struggle over ideologies, a struggle stronger than family ties and that threatened the very roots of the Sporny family. But, like the other girls, she felt it was a family matter that might best be settled without outside interference, so she said no more.

Several times as she was going to work in Bob's repair shop, Kay walked in on Dr. Weeks, his head in his hands, obviously worried about his lost plans.

Kay wanted so badly to help him, but how? Bob, too, sometimes seemed tired and worried, but Kay hesitated to mention the loss of his father's plans. Now and again she saw a grim-faced stranger entering or leaving the Weekses' house. She felt sure these were FBI men or detectives, but nothing was said about them.

One day Kay drove by the Sporny house. Mrs. Everett had missed her pastry order from the Spornys for two weeks, and Kay, remembering her last conversation with Anna, decided to drive by and make sure everything was all right.

To her surprise the house was shuttered and all shades were pulled down tight. She knocked several times, but there was no answer. Once she was sure she heard steps inside, and she knocked again briskly and called out, "Anna," "Mrs. Sporny," "Anybody home?" but only her own voice echoed in her ears. Kay felt concerned and a little hurt. Could the Spornys be trying to avoid her?

There was nothing to do but get in the car and drive home.

That night, though, Kay sat in her room, worried. She was worried about the Spornys, and then she started thinking about Bob and Dr. Weeks. On an odd impulse she pulled out from her wallet the message she had sent for the stranger at the Thompson-

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ville Fair. She had accepted that message as a joke when it was sent, but something had kept her from throwing it away all through the summer. Now she knew she had held on to it because it had always seemed somewhat mysterious—and she felt that its mysteriousness was somehow tied in with Dr. Weeks' loss.

Was it just that everything seemed mysterious when you were involved in a mystery, she wondered, or could this piece, too, have a place in the puzzle? Suddenly an idea came to her mind: The message had gone to France; why not ask the advice of Marie, her French YL friend, on their next contact? Marie had told her of her uncle in France's secret police—the Sûreté. Perhaps he could help identify the "Mr. W. Esch" to whom the message had been sent or the mysterious stranger, "C," who had signed it.

Later that evening, when it was time for Kay's schedule with Marie, she knew it was probably an unlikely chance but one worth taking. But as luck would have it, the radio waves were playing games with Kay. Every time she heard the French girl's voice coming into the room, not loud, but certainly audibly, Kay answered at once. But Marie apparently could not receive Kay's call, for she continued to repeat "W₄WOW, come in, please."

Finally Kay realized their schedule would have

to wait until the following week. Disappointed, she idly turned the knob of her receiver.

There were the usual ham conversations, and one or two amateurs were calling CQ. Usually Kay would have loved to have a chat, but now she felt dispirited. She was too disturbed about her friends to enjoy a casual talk tonight, no matter how pleasant. She was tuning near the end of the dial and was just about ready to switch off her set altogether when she suddenly sat up straight.

A faint voice at the very edge of the dial was calling, "CQ America—Mayday. . . . CQ -America—Mayday!" "Mayday," Kay knew, was the phone signal for distress, just as SOS was used by Morse code operators. This was obviously a desperate call for help!

The moment the ham, who signed with Brazilian call letters, completed his call, Kay's trembling voice answered his CQ. She made her reply as brief as possible.

The faint voice immediately spelled out Kay's call letters. He had heard Kay's reply and was grateful, the voice said. Kay sighed with relief that he had heard her, while she tensed to learn what was wrong.

"I need help desperately," said the man. "My little boy is terribly ill with spinal meningitis, and the doctors say the only thing that can save his life is a new

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miracle medicine, manufactured in America. There is none in all of Brazil, and he must have it within the next twenty-four hours if there is to be any hope. Every minute we delay we are taking chances. . . . Can you help me?" The man's voice ended on a desperate and pleading note.

"I'll try," Kay promised quickly. "I mean, I will get it," she added grimly. To herself, though, she wondered how to go about it, but she felt she couldn't add to the fears of this harried father.

She kept her voice calm. "Keep your receiver tuned to this spot on the dial until you hear me calling you. I'll go right to work."

First she ran to the telephone. She had carefully noted in her log book the name and strength of the medicine and the amount needed, together with the ham's name and address. "Dr. Brown?" The voice at the other end of the phone gave a sleepy grunt, and for a moment Kay felt embarrassed at having awakened the Everett family doctor, but she knew this was a real emergency.

Kay quickly explained the situation, ending with, "So if you have some, I'll jump in the car and get some now and . . ." Her voice trailed off as Dr. Brown interrupted.

"Sorry, Kay, but I don't have a bit of that on hand. That's a new medicine—just been on the market

a few weeks and I doubt if you'll find any in the whole state of North Carolina. Better tell him to try to talk to somebody in New York."

Kay put down the receiver slowly.

Mr. Miller! She'd call him. She knew Mr. Miller was a pharmacist as well as owner of the drugstore, for often when she had sat sipping sodas she had seen him mixing prescriptions in the back. It was late, but Mr. Miller was still in the store.

"No, Kay. I've never gotten any of that medicine in. And I can tell you for a fact that there's none for mules around, because a doctor over in Charlotte called me last week looking for some. He said he'd already called everybody he could think of in the state. I know you won't be able to get any, Kay."

Kay walked back to the rig with dragging steps. She couldn't bear to tell the man she had failed. She had one last desperate thought. Dr. Brown had said New York. . . .

She turned the receiver dial furiously. She tuned so fast she went right past a station that was sending out a slow CQ. It signed with a W2 call. She quickly checked her call-book magazine. It was New York!

Kay had left her transmitter on "stand by," and she rapidly answered the other's call, adding her own "Mayday, New York," to insure his return.

Almost at once the New York station returned her

call. "Heard your Mayday call. What can I do?"

Later, when Kay leaned back in the chair, it all seemed so simple. The New York ham had located the medicine by calling a local hospital. He had picked it up himself, had driven it out to New York's huge Idlewild airport and waited until a Rio de Janeiro-bound plane had been ready to take off. The pilot had taken the medicine, promising to see to it that it was delivered.

Kay then told the waiting father what had happened, so he could meet the plane. And his grateful thanks had made the human chain—and Kay's link in it—more than worth all the trouble.

Kay knew how many times ham radio had been the means of saving lives. She remembered the famous story of Dorothy Hall, W2LXY, a New York YL, who had picked up a distress call from Pitcairn Island where the descendants of the seamen who had mutinied on the British Ship *Bounty* lived. They were desperately in need of food and medicine. Dorothy had tried to get the supplies sent through governmental channels, but when she found that diplomatic red tape would hold up delivery for weeks she had spoken via ham radio to a steamer in the Pacific Ocean and persuaded the captain to detour from his course to help. Within thirty hours the starving islanders were greeting the relief ship

Kay remembered, too, a story of Ugashik, a village in Alaska, which suffered one year from a dread scarlet fever epidemic. The Indians cowered helplessly in their huts, waiting for the red plague to strike first one and then another. Only one man seemed to feel he could help: Virgil Hanson, a representative of the U.S. Department of the Interior and a newly licensed ham operator. Virgil sent out a frantic SOS.

In Juneau, Alaska, another ham answered Hanson's call and was instrumental in dispatching a Pacific International Airways plane, which brought to Ugashik a doctor and nurse of the Indian Bureau. Less than twenty-four hours after Hanson's call for help the villagers were being given scarlet fever antitoxin. Soon those who were ill had been treated, and the epidemic was curbed. The Indians thanked their gods for the help of the mysterious radio waves.

Kay thought, too, of the hundreds of scientific expeditions that have wandered over the globe with amateur radio operators on hand to offer the sole means of outside communication. These hams have helped explore the darkest wilderness in Africa, have floated down the Orinoco in oil-prospecting houseboats, have mushed with dogsleds in the Arctic, climbed hitherto unknown mountain peaks with radio gear strapped to their backs.

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It began as far back as 1923, when Commander Donald B. MacMillan, the famous Arctic explorer, made preparations for his ninth expedition. He knew from experience that there was nothing so demoralizing to his men as the months of being totally cut off from the outside world. He knew, too, that this lack of communication had led to disaster for many previous expeditions.

So this time when the Macmillan expedition sailed from Wiscasset, Maine, Don Mix, a Connecticut amateur, was on hand with a complete amateur station. Don Mix established a new world's long-distance record and by means of his ham set brought entertainment and news of the world to the explorers throughout the long months. "No polar expedition will attempt to go north again without radio equipment," forecast Macmillan on his triumphant return. His prophecy has come true.

Kay went to bed that night with the happy realization that in her own small way she, too, could be called a ham hero. For the medicine would soon be delivered—vitally needed medicine that had been started on its way by Kay Everett an amateur DX.

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— . . . — . . . — *chapter nine*

When Kay's next schedule with Marie drew near, she was ready early with the set all tuned up. And the moment Marie finished calling "W4WOW" in her perfect English but with its delicate French accent, Kay was there returning the call.

"Marie," said Kay, "I have a terribly important favor to ask you—or rather to ask your uncle in the Sûreté."

Kay then told Marie about the message at the fair,

about the stranger, who, despite the hot weather, always appeared in a heavy dark-green velour hat, and about her own feeling that this message was tied in with a local theft of great importance. She even admitted that she felt this man might be some kind of international criminal.

Marie promised to talk to her uncle at once and see if he had ever heard of anyone named W. Esch or could guess who "C" might be.

At least, thought Kay as she walked into Bob's ham shack, something had started—some wheels were in motion, wheels that might eventually unravel the mystery and make the Weeks a happy family again. She found it comforting to have taken a definite step, no matter how far fetched it might prove to be.

Finally it was the morning of the long-awaited world-wide DX contest.

"Please solder this in, Kay," called Bob, tossing her a small paper-covered condenser. He indicated an upturned radio that Kay immediately recognized as the foreign set belonging to the short-wave listener.

"I promised it in time for the contest," reminded Bob. "Well, we've got to get it over there this morning."

By this time Kay could follow a radio diagram with ease, and she could solder a condenser or re-

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sistor as quickly as Bob. Of course, he still supervised the major repairs, but already he would turn over a radio to her for a simple replacement of a part and let her test the tubes on the testing meters that lined his workbench. Kay was happier about her ability in Bob's radio repair shop than she had ever been about anything else she had done. Was it simply because she was so proud of being a ham, or was it to please Bob? She glanced shyly at his tall figure bent over a radio. She knew how much she valued Bob's approval; sometimes she wondered if he ever noticed.

"Ready with that set?" Bob, as usual, brought Kay back to earth.

Kay rode with Bob to deliver the radio later that morning. They were soon in a region Kay hardly knew. It was on the very edge of town, and though Stafford was not a widespread town Kay usually stayed pretty much in her own neighborhood.

The area was more heavily wooded than most of Stafford, and at first Kay enjoyed peering about at the trees and watching to catch an occasional glimpse of the mountain flowers clustered in the fields that she knew would dance right up into the Carolina mountains visible just ahead.

How wonderful, thought Kay, to be able to see and enjoy these flowers and hazy green mountains. What a nice town. . . . But even as she thought it,

a cold fear crept into her mind: A wonderful town, but a threatened town. What was it that Thompsonville ham had told her when he mentioned sabotage in Thompsonville? He'd said townspeople were looking at one another with suspicion. Perhaps that could happen here, too. Unless I can stop it, determined Kay. She sat up straighter and now peered out intently.

Bob carried the radio up the steps of a small cottage set back a bit from the road. From the car, Kay saw the door open, and then her casual glance froze. The man at the door, she was sure, was the stranger from the Thompsonville Fair. Even without his green hat she recognized the coarse features and shifty eyes.

Kay put her hand on the car door, ready to jump out. Then she stopped. What could she do? Demand an explanation of that message . . . or ask him if he were a spy? She smiled wryly at her own naïveté. But before she could think of anything else to do, the door was shut quickly, and Bob was coming down the walk with a puzzled expression on his lean brown face.

"Funny man," said Bob, climbing into the car. "I told him it was six dollars. He pushed a ten-dollar bill into my hand—practically threw it at me, and said, 'Keep the change.' I rang again, but he called out, 'Keep the change—you!' and I could hear him shut-

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ting an inner door. Does this look like the kind of house a wealthy man would live in?"

Kay shook her head. Her own expression was grim, but Bob didn't notice. Kay had decided to say nothing now, and she concentrated on memorizing the route back to town. This time she hardly noticed the trees or the flowers, she was so busy remembering. "Turn right at a white house, corner Elm Street . . ."

"Why don't you eat, Kay?" asked Mr. Everett. Kay had been sitting motionless in front of her dinner plate until, as her father commented, the food was cold and rather unappetizing.

"Don't you feel well, dear?" asked Mrs. Everett worriedly.

"Yes, I'm fine," said Kay. "I'm just not hungry tonight. I guess I'm too excited to eat. Just think, soon every DX hound in the country will be on the air, trying to total up enough points to win a DX award. Or," she added hopefully, "at least to get honorable mention." Kay's eyes were sparkling.

"Still, you should eat," began Mr. Everett. "If ham radio is going to disrupt your life—"

He still doesn't really appreciate it, Kay was thinking, when her mother interrupted Mr. Everett. "Now, dear, a little excitement won't hurt Kay.

After all, you don't eat very much on the morning of your club golf match, do you?"

Kay was in her room a full forty minutes before starting time for the contest. She tuned up her transmitter carefully, turned on the receiver switch, listening carefully as she tuned across the band to make sure her reception was good tonight. She even walked over to her window to take a look at her antenna and check to be sure it was firmly anchored to the rig. The antenna was there, all right, swinging expectantly in the air.

It was one of those balmy summer evenings, warm, but with a delightful breeze. Kay stood at the window, smelling the pleasant odors of Stafford—the clover, the honeysuckle from the yard next door, the summer roses her mother had planted right below Kay's window.

How nice to be here in America, thought Kay, where you can smell such nice things on a peaceful summer evening. Then she realized that every ham all over the world, waiting like her for the opening of the contest—every one might be thinking: How nice to be in Germany or in France or in Africa; what a wonderful smell, what a marvelous feeling this country of mine has.

Kay had a sudden realization that it is the familiar we each love, but that it is a mistake to think that

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just because a place is familiar to us it is necessarily the nicest—or pleasantest—in the whole world. Or the only place to live. She realized something that was always to help her appreciate life: The world is full of pleasant, exciting, wonderful things, and the thoughtful person will make his evaluations only after he has seen them all himself.

"Penny for your thoughts?" It was Flip at the door. She had come to watch Kay operate in the contest and to spend the night at the Everetts'. Would-be-ham Flip rushed about busily, trying to help. She sharpened every pencil she could find and placed them beside Kay's open log book; she even dusted off the top of the operating table, a big walnut desk that had once been used as an office desk in Mr. Everett's carpentry shop and that he had donated to Kay as a sign of interest in her activities.

When the hand on Kay's electric clock reached the hour Kay was already seated at the desk.

Immediately everything started breaking right for her. Her air friend Maude Phillips of Alberta, Canada, was the first to give her a call. No long chat, this one, when she was trying to crowd in every possible contact. Kay duly noted Canada in her contest log and tuned the dial excitedly.

She snared a station from Puerto Rico with ease, and then one from Mexico. At any other time she

would have sat and gloated, but tonight she had time only for a quick thrill of excitement, and she continued turning the dial.

Somewhere she heard Verna St. Louis faintly signing her call. So even Verna, the Alaskan girl ham, was taking time out from her busy summer season of commercial fishing to get in the DX contest. Verna's signal was so weak that Kay passed her by.

She tried without success to contact an English station, then got another Puerto Rican. Though she'd already talked to one Puerto Rican in the contest, still this counted for extra points in the final tabulation; each contact counted, but what she was really seeking were new countries.

Kay sent out a long CQ, and then on an impulse decided to make it a "directional" CQ, one that specified the area you wanted to talk to. She called "CQ Asia." Surely there were Asians in the contest. Kay had never worked one, and she needed the continent for her dreamed of Worked All Continents certificate, as well as for this contest.

Kay leaned back in her chair prayerfully as she carefully turned the receiver dial. At first she heard only the other stations working one another, and she passed by a German ham sending out his own CQ. She was tempted to answer him but she continued

tuning. Then, way down at the end of the radio band, she heard a Japanese ham returning her call. Kay nearly jumped out of her seat in her excitement, and Flip yelled, "Zumpie, you've got him! Asia!"



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— . . . — . . . — *chapter ten*

Kay waited breathlessly as the Asian began to sign his call letters. Just as he said "K"—the traditional ham slang for "come in now, please"—Kay heard an insistent voice repeating her call letters and even her name on a frequency slightly to one side of the Asian ham. She turned her dial quickly, and the other voice now came booming in.

"Kay, W₄WOW, this is Marie—emergency, Kay, emergency. . . ."

Kay sat tense. If she answered Marie she would undoubtedly lose her chance to talk to the Asian - at least for now, perhaps for a long time, for she knew Asian stations were hard to reach. Such a decision might easily cost her the contest and would certainly delay her getting her precious WAC certificate.

But even as all this flashed through Kay's mind she knew that she had no choice but to give up the Asian QSO. Marie would never interrupt her this way in a contest if she didn't have something vital to say. She had known Kay was going to enter the contest, and it was obvious she'd been listening for Kay. It was almost more than Kay could bear, but she resolutely began to spell out Marie's call letters.

Flip, open mouthed, could only stare in mystification. Her puzzlement increased as Marie began to talk. The French girl's voice sounded excited. "My uncle says a notorious Czechoslovakian Communist spy is named 'Wesch.' He thinks the Mr. W. Esch that the message was sent to is probably Wesch. Wesch and two other dangerous Communist spies were in France until recently, where they were suspected of sabotage and stealing government papers.

"Two of the men suddenly dropped from sight, and they apparently reached America and disappeared there. The third, Wesch, is still in France.

. — — — — . — — — — —
The Sûreté has known about him for a long time, but they haven't been able to arrest him because they have no evidence to prove his illegal activities.

"My uncle is hoping this may be the means of getting that evidence. He feels sure from what you told me about the local espionage that the man who sent the message to Wesch is one of the spies. And the other, he thinks, may be near by.

"Uncle says you must notify the FBI immediately, as he has reason to believe the spies may be finishing their work in Stafford and getting ready to leave. And, Kay, these men are very dangerous, so don't go near them yourself . . ."

Kay waited to hear no more, for a piece of the puzzle had fitted in her mind at last. "Sabotage and stealing government papers," Marie had said. Kay's long suspicions of the mysterious message began to crystallize. She pulled it out hastily. Immediately the missing link fell into place: "Have met our friend Key Largo." Key Largo—KL—must refer to Dr. Weeks' "KL" plans!

And how does a spy "meet" plans, as mentioned in the message? He steals them!

Kay jumped to her feet. Dangerous men or not, she must prevent their escape so that they could do no further damage and because she now felt they had knowledge of Dr. Weeks' missing papers. She

was certain the stranger she'd met at the fair was one of the spies, and the other, as Marie's uncle had said, must be near by.

Kay switched off her rig. This meant the end of the contest for her. If she quit now there was no chance of her winning or even of getting any honorable mention, but it had to be done. She pulled Flip to her feet.

"Come on, Flip. We've got spies to catch. . . ."

Kay put her finger on her lips and began to steal down the stairs. A now thoroughly mystified Flip crept after her quietly. Kay hoped the car keys would be in their usual place on the mantelpiece, for she couldn't chance going into her parents' room to get them.

She breathed a sigh of relief. They were on the mantel. She knew if she awakened her parents they would never let her go. There would be lengthy explanations, and perhaps by the time the police reached the spy's cottage the man, and any companions, would have escaped or at least have destroyed the missing plans.

Besides, what chance was there that the police or the FBI would believe a fantastic-sounding story of a seventeen-year-old girl. Time, Kay decided, was too important a factor to permit any delay now. She was

convinced she must do this alone, but she was happy to have Flip along for support.

Kay started the car quietly, though it sounded as if it were roaring with a new, unaccustomed noise. She backed it down the driveway and started driving through the night-quieted streets. Flip could be silent no longer. "What, who, where . . .?"

As coherently as she could, and as quickly, Kay brought Flip up to date on events. Driving along, she was glad she had taken the trouble to memorize the route so carefully.

Stafford is a small town, but distances can seem great when you are in a hurry. Finally Kay reached the block where the stranger lived. She parked under a clump of low-hanging trees and beckoned to Flip.

Flip, wearing a real cops-and-robbers expression, silently got out of the car and stole down the street.

As if to confirm Kay's suspicions, in the driveway stood the low-slung foreign car Kay had seen so long ago near the Spornys' house. She suddenly thought about the Spornys, too. Might they, somehow, be in real danger? But there was no turning back for Kay now.

She motioned to Flip again, and they went silently up the driveway, keeping close to the shadow of the house. Kay stopped once. Her knees were trembling so much, she could scarcely walk. She stole a look

at Flip and saw her eyes glowing in the dark. Kay reached over and squeezed the other girl's hand. Carefree Flip could be serious and helpful when necessary.

The house seemed dark and quiet, but Kay had seen a light from a rear window, and as the girls, clinging to the side of the building, crept around the back, they could hear voices.

Once Kay stumbled over a root sticking out from the ground and just managed to keep from crying out in surprise and fright. Flip bumped into her, and for a moment the two girls clung together against the side of the house. Then Kay shook herself and moved on.

When they were directly under the window but still well within the shadow of the house, Kay looked up. In the dim light she could see the swarthy stranger sitting at a table, talking to two men. One was a stranger, but he looked like someone she'd seen around Stafford—and the other was Stepan!

There was no question that it was Stepan, and Kay's heart did a flip-flop of fear when she realized that her half thought-out worries about the Spornys had had a real basis. Now she knew she had been correct in thinking she'd seen Stepan talking familiarly with the stranger. His denials at that time only gave support to Kay's conviction that these men were

indeed the hunted spies. Now, too, Anna's statements about Stepan's Communist leanings fitted in. But "now" might be too late—unless Kay acted quickly.

She turned to Flip. "Flip, hurry to Bob's house. Tell him I'm at the short-wave listener's house—he'll know where. Tell him to come and to bring the police fast." She thrust the car keys into Flip's hands. Flip could drive, she knew, even though she seldom had the use of the Adamses' family car. "Get the police and call the FBI, too, so they can get here. Hurry, Flip." She gave the other girl a little shove to start her on her way.

"What about you—" began Flip.

"Never mind," insisted Kay. "I've got to stay here in case they try to leave."

"Suppose they do."

"I'll stop them somehow," promised Kay more surely than she felt. "Now, shoo—"

Flip ran off, but as soon as she disappeared around the side of the house Kay felt lonely. The little noises around her in the yard suddenly seemed louder, and she could hear her own heart beating noisily.

She held her breath. The men were talking in the room above her. She heard the swarthy stranger's voice saying: "Leave the transmitter turned on. Right on the frequency Wesch told us, so we can get the message the minute Wesch gets on the air."

Kay felt relief that they were speaking English, and then she understood the reason as the third man's voice came ringing out in definitely American accents. "He'd better tell us all we need to know tonight, so we'll have our travel orders. It's easy enough for you two. Nobody in town knows you, but Dr. Weeks and the other men at the Laboratory know me, and plenty of other people in Stafford, too. I'm supposed to be away visiting my dying sister, but how long can she go on dying?"

Stepan spoke next. "Only for tonight. Then you can officially bury her. Wesch is definitely going to talk to us this evening. He planned it for tonight because that ham distance contest is on the air and there will be so much noise from them and so many foreign stations on the air that one more foreigner will not seem strange. Once he gives us word where to leave the plans and where we go next, we can do precisely that—go."

"What if he has more work for us here?" the American's voice grumbled. "Last time we were supposed to go, he gave us that Thompsonville job to handle. I wish I'd never—" He let the words die, as if afraid of his own thoughts.

"Listen," lashed out Stepan, "you've been well paid for your efforts, so don't act so mistreated." He

ended up in a storm of Czech that Kay couldn't understand, but she could guess at its vicious import.

The swarthy man's voice was soothing. "Stepan—Lawrence! Don't let's start quarreling now. We've each done our jobs well. Remember, Stepan, without Lawrence's help we would never have known when to take the plans—would not even have known when they were to be completed. In this business you work together or you die." His voice deepened on this ominous note, and he said, "Come, let's have a drink and relax until time for Wesch."

Kay heard them move toward the front of the house and she leaned against the side of the building, still in its shadows. Now that she realized how close to escape the men were, she felt impotent to act.

Suppose Flip didn't get back with help in time? Kay knew once the men had their message they would leave, and without a trace. She trembled as she realized that if she hadn't left the contest to answer Marie's call there would have been no chance of stopping the spies.

But again she shivered as she realized she couldn't wait for Flip's return. The message might come any minute from Wesch, and the men would obviously leave on the heels of it. She must do something alone. Without an actual plan she climbed onto a rotting log that had fallen under the window and began ten-

tatively to push the screen up. The plan would come of itself, she felt.

Kay slipped over the window sill and found herself in a large, dimly lit room. At first she could not make out the furnishings, but in a few minutes her eyes became accustomed to the half-light and she could see that this was a shabby bedroom. It was furnished with an ancient iron bed and an old dresser with its drawers hanging half open. She could see that the drawers were empty and had been carelessly pushed halfway in, as if someone had taken out things hurriedly and packed rapidly.

She could hear the voices of the men from the front room. They were apparently playing a card game, calling out numbers and flipping down cards.

Kay's eyes were now so accustomed to the dim light that she was able to spot several large metal cabinets on the big desk against one wall. She sidled over to them, taking care not to knock into any of the furniture. She knew the hum she heard was a receiver warming up, and sure enough on the table top stood the radio she and Bob had delivered that very morning.

Nearby was a radio transmitter. Its tubes glowed softly as it, too, waited, ready for instant use.

A daring idea sprang into Kay's mind. Why not go on the air and make sure that help came quickly?

Unless something had happened to Flip, she should have been back by now, Kay felt. But at the moment Kay had no time for such worries. She knew she had to get help quickly, and then make the station unworkable so it could not possibly be used by the spies. Obviously this complete short-wave station was being operated in the amateur frequencies for illicit purposes.

She was thankful that she had helped repair the receiver herself and was familiar with its controls. She was happy, too, that she had spent so many hours in Bob's shack, for a strange transmitter held no terrors for her now. Kay checked the meters and pushed the proper switch to go on the air. She slipped into the chair at the desk and reached out her hand —

Then she heard a chair scrape across the floor and footsteps came down the hall. . . .

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— . . . — . . . — *chapter eleven*

Kay froze in her seat. Was it time already for Wesch's message? If so, they would be upon her in a minute.

But the steps went into another room down the hall, and she heard a refrigerator door being opened and ice cubes shaken out of a tray. Kay let out her breath slowly in relief as the steps went back down the hall.

She watched her hand with fascination as it shook the microphone in her nervousness. "Mayday," she

said, repeating over and over the amateur emergency call. Then she quickly switched the receiver on and began to tune the amateur band, praying that someone had heard her.

The band was full of happy testers, and Kay had time for a momentary twinge of envy as she tuned past them. Nobody seemed to have heard her, and her heart sank lower and lower. But toward one end of the band she thought she heard her own call letters being spelled out. She tried rapidly to focus the receiver, tuning more sharply to bring the signal in louder.

Just then Kay heard steps as well as voices. This time there could be no doubt that they were coming right toward the bedroom.

She scrambled up hastily, switching both receiver and transmitter back to the "stand by" positions where they had been previously. She glanced swiftly over the desk. Everything seemed the way she had found it. One quick look, then she dove into the kneehole of the desk, crouching back against the wall. She was scarcely out of sight before the door opened and someone switched on a bright overhead light.

A pair of knees came sliding in under the desk and stopped just inches in front of Kay's face.

It turned out to be Stepan, for Kay recognized his voice as he muttered, "Just a few more minutes. Then

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maybe we'll be out of this town once and for all. Hanging around my cousin's has been driving me crazy. That woman has no more idea of politics or the way a government should run its people—"

It was all Kay could do to keep from crying out in defense of her country. But she held her breath and tried to crouch lower. She wondered if anyone had heard her Mayday call, and if help did come she wondered if it could possibly arrive soon enough to prevent her being discovered.

As if in answer to her thought Stepan shifted his chair in closer and hit her square in the jaw with his knee. He cursed in Czech and leaned down to peer under the table.

Kay found herself looking him right in the eyes. There was no place to hide, so she just crouched there and tried to appear brave. For a moment Stepan seemed transfixed with surprise, and then he reached under the table and brutally hauled Kay out and into the center of the room.

His grip on her arm was painful, but Kay was determined not to cry out or even wince. She stood stoically while the other two men rose from their chairs with exclamations of surprise.

"So! We have a caller. And what are you doing here?" asked Stepan. "Spying on us, eh?"

Kay had been hoping that Stepan might not rec-

ognize her. Her mind whirled. She knew her story would have to be a good one. "Oh, no," exclaimed Kay. "I've lost my cat, and I thought I saw her climb into this window. I hated to disturb anyone and thought I could find her quickly and go."

"Well, shall we all search the house for your cat now?" Stepan's voice was heavy with sarcasm.

"Oh, she was spying on us, all right." This came with conviction from the swarthy man, Kay's Thompsonville Fair acquaintance whom she had heard called Josef. "The question is, who else knows we're here?"

"And if they'll follow her," put in the American.

Stepan grabbed Kay's arm and began to shake her viciously. Her head snapped back and forth with the force of the motion, and she began to get a painful, thudding headache near the base of her skull.

"Who knows you're here? Who sent you?" Stepan shook her with each question until Kay expected her arm to be pulled off.

She shook her head numbly. She wouldn't talk, no matter what he did. That much she determined. She had a sick realization that she had handled this situation very badly. A feeling of stupidity and futility now overwhelmed her. Rather than go to the authorities for fear of delaying things or of being laughed at, she had risked everything on her ability to handle the

job alone, and now she had failed. Not only had she been unable to damage the illicit station or contact anyone herself, but now she, too, was in real danger.

She looked up just in time to see Stepan's hand raised as if he were preparing to strike her head. She felt too unhappy over the turn of events even to try to move aside, but Josef's deep voice boomed out, "Stepan, have you lost your mind? We haven't time for that sort of thing. Wesch will be on the air in one minute. Stuff her mouth so she can't yell and tie her up. It doesn't matter what she knows; we'll be out of here before it can do her any good."

Stepan nodded reluctantly and removed his hand from Kay's arm so abruptly that she almost fell over backwards. He grabbed a sheet from the bed and began to tear it into strips. He quickly bound one strip around Kay's mouth, wrapped the other strips roughly around her arms and legs, and then tied her to a leg of the iron bed. Kay was trussed like a turkey ready for the Thanksgiving oven and just as impotent to act.

Her limbs ached and her head pounded; she hoped something, anything, would happen right away. Stepan was back at the transmitter, and then she heard a voice boom over the air. It was the long-awaited Wesch.

"Leave tonight, at once. Write down exactly what

I say. . . .” The authoritative voice then began a message so rapid and cryptic that even though Kay now knew their general purport she could only guess at what he was saying. He used a code of numbers and letters, now and then punctuated by a word Kay could spot, such as “atomic” or “airplane,” and then off into numbers again.

Finally the message must have ended, for Stepan said, “Check,” and stood up.

Then things began to happen.

Glaring lights shone into the room and a fusilade of warning shots ripped up through the roof of the building. The three spies fell flat on their faces under the window, and one of them—Josef—pulled out a gun.

But the room was suddenly filled with men. There were half a dozen granite-jawed men, several of whom Kay recognized as those she had seen visiting Dr. Weeks. They were from the FBI, and she saw a welcome Bob and Dr. Weeks, too.

There was a brief but fierce tussle, at the end of which the spies were stood against one wall of the room with hands raised. It was Bob who hurried over to untie Kay and who cradled the shaking girl in his arms.

Kay was relieved to see several of the government men herd the spies into a waiting car, while others

began a systematic search of the house. Dr. Weeks was looking through the desk himself; suddenly he let out an exultant cry. The plans were in his hands. At last the sought-after KL plans were safe again. The expression of happiness and relief on the man's face was enough to repay Kay for all she'd been through.

Dr. Weeks hurried over and kissed Kay's forehead. "I can never thank you enough, dear girl—" he began. Then he noticed how shaken Kay was, and he motioned to his son to take her home.

At first Kay was content to rest against Bob's strong shoulders and let him chauffeur her. Then she straightened up. "Oh, my goodness—Flip! Whatever can have happened to her—something always does," she wailed.

"It does and it did," agreed Bob, "but Flip's okay. In fact, she's waiting for us at your house now. I got your radio message—"

"You did?" interrupted Kay.

"I heard you," continued Bob, "but when I returned your call you must have already left the air, for you didn't answer. I was frantic to know what was wrong. But just then Flip came rushing in. She'd had a flat tire and had walked and run most of the way. I called the FBI right away.

"I was afraid your folks might wake up and find

you gone and get frightened, so I asked Flip to go over there and explain to them. Flip said she'd call the Spornys, too, and ask them to come to your house. She was afraid Stepan might get to them and hurt them somehow. I didn't need her directions here, of course. I remembered the way well enough from this morning, and I kept saying to myself all the way out—'So that's why that man wouldn't open the door for his change.'

"They should all be at your house by now," he concluded.

The Everetts, the Spornys, and Flip were in the living room when they arrived. Kay stole one glance at her father's worried face, and her heart sank. Now, after all the danger she had been through, he would surely never, never want her to go on the air again. Both her parents looked drawn and frightened.

Kay's mother ran and embraced her daughter, tears of relief running down her face. Kay, who had held up so well and for so long, began to sob herself. It was a relief to be able to let down and stop being brave.

She sat down on the couch beside her mother. The living room seemed filled with people. Even Diana had been called and came hurrying in now, and one of the FBI men entered.

"Just like Grand Central station," muttered Kay

to her mother. "Did you expect a nice quiet night's sleep, Mom?"

"You're all right, dear, and that's all that matters to me," her mother answered.

But methodical Diana wanted explanations. "It's all very simple," said Flip. "Just listen: Stepan Sporny and those two other spies stole the missing plans from Dr. Weeks' home to give to the Communists. One of the spies was an American, Dr. Weeks' laboratory assistant. He knew what was going on and knew just when Dr. Weeks' work was finished, so that they could take the drawings then. Their foreign contact—a man named Wesch—was feeding them instructions on what their next act of sabotage or thievery should be—"

"You're missing the most important thing," the FBI man interrupted. "This young lady"—he indicated Kay—"helped us get those spies, and the plans, too, in time." He bowed to the embarrassed Kay. "We not only found the missing radio plans but we have reason to believe those same men are responsible for the Thompsonville sabotage. And the Sûreté is picking up Wesch right now. There'll be no lack of evidence to convict him this time."

Kay's mother moved closer to her daughter and put an arm around her, while Mr. Everett also stepped to her side. "Kay," he said, "I owe you an

apology, and I want to make it now. You were right in everything you said about amateur radio. It's helped you grow from a shy and sometimes self-centered little girl to a poised young lady.

"You were foolhardy to go to that house before calling the police, and I know you won't do anything that foolish again. But I'm proud of all the rest. I know what that radio contest meant to you. I know you've been hoping for weeks to win it. And yet you gave it up without hesitating.

"From now on, Kay, you can use your ham station whenever you want to. I won't set hours for you any more. I'll try to treat you like the adult you've become this summer."

He smiled down at his daughter as he ended what Kay thought must be the longest speech she'd ever heard her father make. As for Kay, she was so choked up she could only squeeze his arm in gratitude.

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— . . . — . . . — *chapter twelve*

They left one by one. The FBI man shook Kay by the hand. "If you ever need a job, miss . . ."

Then the Spornys. Mrs. Sporny looked more relieved and happy than Kay could remember. "I suppose I was foolish not to realize what was happening," she said to the girl, "but you hate to admit that a member of your own family is a traitor to his new country."

She shrugged and added, "But that's all over. Our American life is ahead of us." She turned to Mrs. Everett. "I'm sorry you haven't gotten your cookery order lately. Stepan frightened me so—without my being able to prove anything—that I was afraid of involving my new friends in something I myself didn't understand. So I just waited. I even locked my house tight and didn't answer the door. I almost didn't answer the phone tonight when Flip called, I was so worried."

"Well, I'll take my usual order," said Mrs. Everett in a matter-of-fact manner.

"This week, for sure," beamed Mrs. Sporny. Anna and Karel waved gaily at Kay as they left. Anna called, "Kay, we're going to move soon, too—a nice new house."

Finally everyone but Bob had left, and Mr. and Mrs. Everett went upstairs to rest a bit before dawn.

Kay walked out on the porch with Bob. They sat down in the glider and for a few minutes were content to swing gently back and forth, breathing in the balmy summer air. A soft breeze blew the honeysuckle, and its sweet fragrance filled Kay's nostrils.

Bob reached over and took both of Kay's hands in his.

Her heart beat so loudly she was afraid he'd hear

it. This was the first time Bob had ever taken her hand except to guide a soldering iron.

"Kay," he whispered. "Summer will soon be over. Would you think it strange if I asked you now about coming to my college opening-week dance? It's only a few more weeks, and I don't want to wait till somebody else invites you."

Kay accepted with as much restraint as she could manage.

She had been dreading the fall, when Bob would go back to engineering college and she would start at the state university, miles away. But now she determined that she would take a year at the university and then switch to an engineering school, too. She was thinking of a career as a government radio operator.

"Yes, summer's nearly over," repeated Bob, pulling Kay closer to him while he put one arm first timidly and then firmly across her shoulders. "Feel that chill in the air?"

It's true, thought Kay. This wonderful summer will be over soon, but there's so much ahead: the university, ham radio, the next DX contest—and Bob.

appendix a

In order to become a government-licensed radio amateur you must pass an examination given by the Federal Communications Commission. The test includes the sending and receiving of International Morse Code at thirteen words per minute, and questions about the technical side of ham radio, basic amateur practice, and the laws that govern the hobby. This is the "general" amateur test, and the license received as a result of passing it is renewable as long as one is an active ham.

For those not ready to take the general test there is a "novice" license, requiring only five words per minute of the code and a knowledge of the begin-

ner's rules and regulations and the most elementary radio theory. The novice license expires in a year, and it is not renewable. In order to remain on the air, the novice must then pass the general amateur test.

All amateurs must learn the International Morse Code, whether they intend to use code or the radio-telephone (voice) method of operating. The code equivalents for the alphabet, numerals, and punctuation marks are shown below. The first thing to do is memorize them, starting with the alphabet. An approved—and easy—way of beginning is to learn the alphabet in groupings, as below. Or if you prefer, you may simply learn a few letters at a time, as A through E, then F through J, and so on.

Think of the letters and numerals in terms of sounds instead of their looks as they are printed, using “dit” for a dot and “dah” for a dash. Thus A becomes not dot-dash, but “dit-dah.”

After learning the alphabet memorize the numerals. You'll see they have a set system and are easy to learn. Finally, learn the punctuation marks, still thinking in terms of the sounds the code makes.

Only after you have learned the meanings thoroughly should you think about speed. This you will get by practice. If you can, get someone to send code to you, and you send it back; you can use a simple

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appendix b

LISTING OF HAM SLANG AND ABBREVIATIONS

These short cuts are used by amateurs all over the world to save time while talking by code to one another on the air. In addition to this list of most popular ones, individual hams are always making up their own. The main feature is brevity: as "nite" for night, or the dropping of vowels, as "nw" for now.

APPENDIX B

AA	all after	NR	number, near
AB	all before	NW	now
ABT	about	OB	old boy
AGN	again	OM	old man (any male amateur, of any age)
AMP	ampere	OP,	operator
ANI	any	OPR	
BCNU	I'll be seeing you	OW	old woman (a married woman operator of any age)
BK	break (break in)	PSE	please
BTR	better	RCVR	receiver
CRD	card	SED	said
CUD	could	SEZ	says
CUL	see you later	SKED	schedule (an appointment on the air)
DX	distance	TKS,	thanks
ES	and	TNX	
FB	fine business, good	TT	that
FM	from	TU	thank you
FR	for	U, UR	you, your, you're
GA	go ahead	VY	very
GB	good by	WX	weather
GDA	good day	XMTR	transmitter
GE	good evening	YF (XYL)	wife
GG	going	YL	young lady, girl, an unmarried woman operator
GM	good morning		
GN	good night		
GUD	good		
HAM	radio amateur		
HI	exclamation of laughter		
HR	here, hear		
HRD	heard	33	love from one YL to another
HV	have		
HW	how	73	best regards
NIL	nothing	88	love and kisses

appendix c

THE "Q" CODE

To save time in communicating with one another, radio amateurs use what are known as "Q" signals. These three-letter abbreviations—all of which begin with the letter Q—stand for a variety of often-used phrases. Some of these "Q" signals are complicated and are used mainly by advanced hams. But they are good to know, and help any amateur be a better ham.

A "Q" signal can be either a question or an answer, depending upon whether followed by a question mark or a period.

APPENDIX C

ABBREVIATION	QUESTION	ANSWER
QRG	Will you tell me my exact frequency (wave length)?	Your exact frequency (wave length) is —
QRI	Is my note (sound of signal) good?	Your note varies.
QRJ	Are you receiving me badly? Are my signals weak?	I cannot receive you. Your signals are too weak.
QRK	What is the readability of my signals?	The readability of your signals is —
QRL	Are you busy?	I am busy.
QRM	Are you being interfered with?	I am being interfered with.
QRN	Are you being troubled by atmospherics?	I am being troubled by atmospherics.
QRO	Shall I increase power?	Increase power.
QRP	Shall I decrease power?	Decrease power.
QRQ	Shall I send faster?	Send faster.
QRS	Shall I send more slowly?	Send more slowly.
QRT	Shall I stop sending?	Stop sending.
QRU	Have you any message for me?	I have nothing for you.
QRV	Are you ready?	I am ready.
QRX	Shall I wait? When will you call me again?	Wait until —, I will call you at — o'clock.
QRZ	By whom am I being called?	You are being called by —
QSA	What is the strength of my signals?	The strength of your signal is —
QSB	Does the strength of my signals vary?	The strength of your signals varies.

APPENDIX C

QSK	Shall I continue sending my messages?	Continue sending your messages.
QSL	Can you give me acknowledgment of receipt? (used to ask —will you send me a "QSL" card to confirm this contact?)	I give you acknowledgment of receipt. (Or I will send you an acknowledgment card, "QSL" card, to confirm this contact.)
QSO	Can you make a radio contact with —? (often used to refer to the actual radio contact between hams)	I can make a radio contact with —
QSZ	Shall I send each word or group of words twice?	Send each word or group twice.
QTH	What is your location? (used mainly for address, as the QTH is —)	My location is —

appendix d

All amateur radio station calls are composed of letters and numbers. United States ham calls all begin with the prefix W; the number following the letter indicates the region in which the ham lives.

- W₁: Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island
- W₂: New York, New Jersey
- W₃: Pennsylvania, Maryland, Delaware, District of Columbia
- W₄: Kentucky, Virginia, North Carolina, South Carolina, Tennessee, Georgia, Alabama, Florida
- W₅: New Mexico, Oklahoma, Texas, Arkansas, Louisiana, Mississippi
- W₆: California

- W7: Nevada, Arizona, Utah, Oregon, Washington, Idaho, Montana, Wyoming
 W8: Ohio, West Virginia, Michigan
 W9: Wisconsin, Illinois, Indiana
 W0: North Dakota, South Dakota, Nebraska, Iowa, Minnesota, Colorado, Kansas, Missouri

Foreign ham stations are easily identified as to location by the same system. Each country has a different prefix. If you hear a foreign station on the short waves you can identify it by its call from the following list.

INTERNATIONAL AMATEUR PREFIXES

AC3	Sikkim	CT3	Madeira Islands
AC4	Tibet	CX	Uruguay
AP	Pakistan	DL	Germany
AR8	Lebanon	DU	Philippine Islands
C	China	EA	Spain
CE	Chile	EA6	Balearic Islands
CM CO	Cuba	EA8	Canary Islands
CN8	French Morocco	EA9	Spanish Morocco
CP	Bolivia	EI	Ireland
CR4	Cape Verde Islands	EK1	Tangier Zone
CR5	Portuguese Guinea	EL	Liberia
CR6	Angola	EP, EQ	Iran
CR7	Mozambique	ET	Ethiopia
CR8	Goa (Portuguese India)	F	France
CR9	Macao	FA	Algeria
CR10	Timor Island (Portuguese)	FB8	Madagascar
CT1	Portugal	FD8	French Togoland
CT2	Azores Islands	FE8	French Cameroons
		FF8	French West Africa

	al		
11	h	h4	Del over 1000
12		h5	11
13	h		12
14	h	h6	13
15	h	h7	14
16	h	h8	15
17	h	h9	16
18	h	h10	17
19	h	h11	18
20	h	h12	19
21	h	h13	20
22	h	h14	21
23	h	h15	22
24	h	h16	23
25	h	h17	24
26	h	h18	25
27	h	h19	26
28	h	h20	27
29	h	h21	28
30	h	h22	29
31	h	h23	30
32	h	h24	31
33	h	h25	32
34	h	h26	33
35	h	h27	34
36	h	h28	35
37	h	h29	36
38	h	h30	37
39	h	h31	38
40	h	h32	39
41	h	h33	40
42	h	h34	41
43	h	h35	42
44	h	h36	43
45	h	h37	44
46	h	h38	45
47	h	h39	46
48	h	h40	47
49	h	h41	48
50	h	h42	49
51	h	h43	50
52	h	h44	51
53	h	h45	52
54	h	h46	53
55	h	h47	54
56	h	h48	55
57	h	h49	56
58	h	h50	57
59	h	h51	58
60	h	h52	59
61	h	h53	60
62	h	h54	61
63	h	h55	62
64	h	h56	63
65	h	h57	64
66	h	h58	65
67	h	h59	66
68	h	h60	67
69	h	h61	68
70	h	h62	69
71	h	h63	70
72	h	h64	71
73	h	h65	72
74	h	h66	73
75	h	h67	74
76	h	h68	75
77	h	h69	76
78	h	h70	77
79	h	h71	78
80	h	h72	79
81	h	h73	80
82	h	h74	81
83	h	h75	82
84	h	h76	83
85	h	h77	84
86	h	h78	85
87	h	h79	86
88	h	h80	87
89	h	h81	88
90	h	h82	89
91	h	h83	90
92	h	h84	91
93	h	h85	92
94	h	h86	93
95	h	h87	94
96	h	h88	95
97	h	h89	96
98	h	h90	97
99	h	h91	98
100	h	h92	99

APPENDIX D

VP8	Falkland Islands	XE	Mexico
VP9	Bermuda Islands	XZ	Burma
VQ1	Zanzibar	YA	Afghanistan
VQ2	Northern Rhodesia	YI	Iraq
VQ3	Tanganyika Territory	YJ	New Hebrides
		YK	Syria
VQ4	Kenya	YN	Nicaragua
VQ5	Uganda	YR	Rumania
VQ6	British Somaliland	YS	Salvador
VQ8	Chagos and Mauritius Islands	YT, YU	Yugoslavia
		YV	Venezuela
VQ9	Seychelles	ZA	Albania
VR1	Gilbert, Ellice, and Ocean Islands	ZB1	Malta
		ZB2	Gibraltar
VR2	Fiji Islands	ZC1	Transjordan
VR3	Fanning Island	ZC2	Cocos Islands
VR4	Solomon Islands	ZC3	Christmas Islands
VR5	Tonga (Friendly) Island	ZC4	Cyprus
		ZC6	Israel
VR6	Pitcairn Island	ZD1	Sierra Leone
VS1	Singapore	ZD2	Nigeria
VS2	Malayan Union	ZD3	Gambia
VS4	British North Borneo	ZD4	Gold Coast and Togoland
			Nyasaland
VS5	Brunei and Sarawak	ZD6	St. Helena
		ZD7	Ascension Island
VS6	Hong Kong	ZD8	Tristan Da Cunha
VS7	Ceylon	ZD9	Southern Rhodesia
VS9	Aden and Socotra Islands	ZE	Cook Islands
		ZK1	Niue
VU	India	ZK2	New Zealand
VU4	Laccadive Islands	ZL	Western Samoa
VU5	Andaman Islands	ZM	Paraguay
VU7	Bahrein Islands	ZP	Union of South Africa
W	United States of America	ZS	

appendix e

SOME BOOKS FOR THE BEGINNER

Calling CQ by Clinton B. DeSoto (Doubleday, Doran), a book of adventures of short-wave radio operators.

Books published by the American Radio Relay League, West Hartford, Conn.:

The Radio Amateur's Handbook, a reference volume of technical information of use to the amateur, including facts about operating ham stations.

How to Become a Radio Amateur, a pamphlet with the necessary information on becoming a ham.

The Radio Amateur's License Manual, a pamphlet which lists all questions and answers that might be asked on a ham examination.

Learning the Radiotelegraph Code, a pamphlet which lists the International Morse Code and suggests ways of learning it.

The Radio Amateur Call Book Magazine (Radio Amateur Call Book, Inc., 608 South Dearborn Street, Chicago 5, Illinois), a listing of hams in this country and all over the world by name, address, and call letters.

Current Magazines:

QST, published by the American Radio Relay League, West Hartford, Conn.

CQ, 67 West 44th Street, New York, N.Y.









